GenCore version 5.1.4_p5_4578

OM protein - protein search, using sw model

Run on: March 24, 2003, 17:46:55 ; Search time 41 Seconds
(without alignments)
68.250 Million cell updates/sec

Title: US-09-620-586B-12_COPY_49_69
Perfect score: 118
Sequence: 1 FVFLQKYPHTHLVHQANPRGS 21

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 908470 seqs, 133250620 residues

Total number of hits satisfying chosen parameters: 908470

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 200 summaries

Database : A_Geneseq_101002:*
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2: /SIDS1/gcgdata/geneseq/geneseqp-embl/AA1981.DAT:*
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	118	100.0	108	15	AAR63162	Human growth diffe
2	118	100.0	108	19	AAW69884	Human growth diffe
3	118	100.0	108	20	AAY15387	Partial amino acid
4	118	100.0	108	22	AAB73183	Human GDF-8 #1. H
5	118	100.0	109	22	AAB20141	Human growth diffe
6	118	100.0	109	22	AAB20142	Cattle growth diff
7	118	100.0	109	22	AAB20145	Growth differentia
8	118	100.0	109	22	AAB20147	Growth differentia
9	118	100.0	109	22	AAB20148	Growth differentia
10	118	100.0	109	22	AAB20150	Growth differentia
11	118	100.0	109	22	AAB20151	Growth differentia
12	118	100.0	109	23	AAM51935	Human TGFbeta prot
13	118	100.0	126	15	AAR63161	Mouse growth diffe
14	118	100.0	126	19	AAW69883	Murine growth diff
15	118	100.0	126	20	AAY15386	C-terminal region
16	118	100.0	126	22	AAB73182	Murine GDF-8 #1.
17	118	100.0	130	22	AAB73189	Rat GDF-8. Rattus
18	118	100.0	160	22	AAB20153	Growth differentia
19	118	100.0	226	22	AAB73188	Chicken GDF-8. Ga
20	118	100.0	254	22	AAB20152	Growth differentia
21	118	100.0	362	22	AAB20132	Turkey growth diff
22	118	100.0	374	23	AAU75623	Chicken promyostat
23	118	100.0	375	15	AAR63160	Human growth diffe
24	118	100.0	375	19	AAW69888	Chicken growth dif
25	118	100.0	375	19	AAW69891	Pig growth differe
26	118	100.0	375	19	AAW69885	Human growth diffe
27	118	100.0	375	19	AAW69886	Baboon growth diff
28	118	100.0	375	19	AAW69887	Bovine growth diff
29	118	100.0	375	19	AAW65460	Human growth diffe
30	118	100.0	375	20	AAY33838	Amino acid sequenc
31	118	100.0	375	20	AAY33839	Amino acid sequenc
32	118	100.0	375	20	AAY33840	Amino acid sequenc
33	118	100.0	375	20	AAY33841	Amino acid sequenc
34	118	100.0	375	20	AAY33843	Amino acid sequenc
35	118	100.0	375	20	AAY33844	Amino acid sequenc
36	118	100.0	375	20	AAY33937	Amino acid sequenc
37	118	100.0	375	20	AAY33938	Amino acid sequenc
38	118	100.0	375	20	AAY33932	Amino acid sequenc
39	118	100.0	375	20	AAY33933	Amino acid sequenc
40	118	100.0	375	20	AAY33934	Amino acid sequenc
41	118	100.0	375	20	AAY33935	Amino acid sequenc
42	118	100.0	375	20	AAY33917	Bovine myostatin s
43	118	100.0	375	20	AAY31189	Human GDF-8 protei
44	118	100.0	375	20	AAY31190	Baboon GDF-8 prote
45	118	100.0	375	20	AAY31191	Bovine GDF-8 prote
46	118	100.0	375	20	AAY31192	Chicken GDF-8 prot
47	118	100.0	375	20	AAY31194	Turkey GDF-8 prote
48	118	100.0	375	20	AAW97887	Human myostatin.
49	118	100.0	375	21	AAB21087	Human GDF-8. Homo
50	118	100.0	375	21	AAY92035	Human growth diffe
51	118	100.0	375	21	AAY77566	Human growth diffe
52	118	100.0	375	22	AAB73187	Human GDF-8 #2. H
53	118	100.0	375	22	AAB20131	Human growth diffe
54	118	100.0	375	22	AAB20133	Chicken growth dif
55	118	100.0	375	22	AAB20135	Cattle growth diff
56	118	100.0	375	22	AAB20138	Pig growth differe
57	118	100.0	375	22	AAB20140	Baboon growth diff
58	118	100.0	375	23	AAE18659	Human promyostatin
59	118	100.0	375	23	AAE18662	Chicken promyostat
60	118	100.0	375	23	AAE18663	Baboon promyostati
61	118	100.0	375	23	AAE18664	Bovine promyostati
62	118	100.0	375	23	AAE18665	Porcine promyostat
63	118	100.0	375	23	AAE18667	Meleagris gallopav
64	118	100.0	375	23	AAU75620	Human promyostatin
65	118	100.0	375	23	AAU75624	Baboon promyostati
66	118	100.0	375	23	AAU75625	Bovine promyostati
67	118	100.0	375	23	AAU75626	Porcine promyostat
68	118	100.0	375	23	AAU75628	Turkey promyostati
69	118	100.0	376	15	AAR63159	Mouse growth diffe
70	118	100.0	376	19	AAW69889	Rat growth differe
71	118	100.0	376	19	AAW69890	Turkey growth diff
72	118	100.0	376	19	AAW30689	Murine growth diff
73	118	100.0	376	20	AAY33837	Amino acid sequenc
74	118	100.0	376	20	AAY33842	Amino acid sequenc
75	118	100.0	376	20	AAY33930	Amino acid sequenc
76	118	100.0	376	20	AAY33931	Amino acid sequenc
77	118	100.0	376	20	AAY31193	Rat GDF-8 protein.
78	118	100.0	376	20	AAY31188	Murine GDF-8 prote
79	118	100.0	376	20	AAW97886	Murine myostatin.
80	118	100.0	376	21	AAB21084	Mouse wild-type GD
81	118	100.0	376	21	AAB21085	Mouse dominant neg
82	118	100.0	376	21	AAY77568	Murine myostatin p
83	118	100.0	376	22	AAB73186	Murine GDF-8 #2.

84	118	100.0	376	22	AAB20134	Mouse growth diffe
85	118	100.0	376	22	AAB20137	Rat growth differe
86	118	100.0	376	23	AAE18660	Murine promyostati
87	118	100.0	376	23	AAE18661	Rat promyostatin.
88	118	100.0	376	23	AAU75621	Mouse promyostatin
89	118	100.0	376	23	AAU75622	Rat promyostatin.
90	112	94.9	375	19	AAW69892	Ovine growth diffe
91	112	94.9	375	20	AAY33845	Amino acid sequenc
92	112	94.9	375	20	AAY33936	Amino acid sequenc
93	112	94.9	375	20	AAW97884	Bovine myostatin.
94	112	94.9	375	22	AAB20136	Sheep growth diffe
95	112	94.9	375	23	AAE18666	Ovine promyostatin
96	112	94.9	375	23	AAU75627	Ovine promyostatin
97	110	93.2	24	20	AAY33922	Myostatin peptide
98	110	93.2	124	20	AAY33928	Reconstructed myos
99	104	88.1	69	22	AAB73210	Partial GDF-8. Un
100	102	86.4	109	23	AAM51927	Human TGFbeta prot
101	102	86.4	126	16	AAR66147	Partial bovine bon
102	102	86.4	126	17	AAR88554	Murine growth diff
103	102	86.4	126	18	AAW23589	Bovine bone morpho
104	102	86.4	126	19	AAW65459	Mouse growth diffe
105	102	86.4	126	19	AAW40816	Bovine bone morpho
106	102	86.4	126	20	AAY06096	Bovine activin WC
107	102	86.4	126	20	AAY06099	Bovine activin WC
108	102	86.4	126	21	AAY77565	Mouse growth diffe
109	102	86.4	126	23	AAM50649	Bovine bone morpho
110	102	86.4	362	16	AAR66149	Partial propeptide
111	102	86.4	362	18	AAW23590	Human bone morphog
112	102	86.4	362	19	AAW40817	Human bone morphog
113	102	86.4	362	20	AAY06101	Human bone morphog
114	102	86.4	362	20	AAY06098	Human bone morphog
115	102	86.4	362	23	AAM50650	Human bone morphog
116	102	86.4	407	17	AAR88553	Growth differentia
117	102	86.4	407	19	AAW65458	Human growth diffe
118	102	86.4	407	20	AAY31195	Human GDF-11 prote
119	102	86.4	407	21	AAB21088	Human GDF-11. Hom
120	102	86.4	407	21	AAY92030	Human bone morphog
121	102	86.4	407	21	AAY77564	Human growth diffe
122	102	86.4	407	21	AAY77567	Human growth diffe
123	102	86.4	407	23	AAE18672	Human growth diffe
124	102	86.4	407	23	AAU75633	Human pro-GDF-11.
125	99	83.9	52	16	AAR66148	Partial sequence o
126	99	83.9	52	19	AAW40818	Human bone morphog
127	99	83.9	52	20	AAY06097	Human activin WC (
128	99	83.9	52	20	AAY06100	Human activin WC (
129	99	83.9	52	23	AAM50651	Human bone morphog
130	98	83.1	128	21	AAB13329	Caenorhabditis ele
131	97	82.2	94	22	AAB73207	Partial cod GDF-8.
132	91	77.1	89	22	AAB73208	Partial sea bass G
133	91	77.1	93	22	AAB73209	Partial tautog GDF
134	91	77.1	136	22	AAB73198	Salmon GDF-8 encod
135	91	77.1	136	23	AAE18674	Salmon allele 2 pr
136	91	77.1	136	23	AAU75635	Salmon allele 2 pr
137	91	77.1	157	22	AAB73197	Salmon GDF-8 encod
138	91	77.1	157	23	AAE18673	Salmon allele 1 pr
139	91	77.1	157	23	AAU75634	Salmon allele 1 pr
140	90	76.3	374	20	AAY33939	Amino acid sequenc
141	90	76.3	374	22	AAB73196	Zebrafish GDF-8.
142	90	76.3	374	22	AAB20139	Danio rerio growth
143	90	76.3	374	23	AAE18668	Zebra fish promyos
144	90	76.3	374	23	AAU75629	Zebrafish promyost
145	81	68.6	23	21	AAB21078	GDF-8 inhibitory p
146	55	46.6	489	22	ABG28970	Novel human diagno
147	49	41.5	358	23	ABP40788	Staphylococcus epi
148	49	41.5	403	22	ABB61203	Drosophila melanog
149	49	41.5	598	22	ABB58590	Drosophila melanog
150	48.5	41.1	229	15	AAR58704	Apo-B RNA editing
151	47	39.8	238	21	AAG21516	Arabidopsis thalia
152	47	39.8	255	21	AAG21515	Arabidopsis thalia
153	47	39.8	257	21	AAG21514	Arabidopsis thalia
154	46	39.0	368	22	AAB94843	Human protein sequ
155	46	39.0	456	20	AAW88304	E. coli O111 antig
156	46	39.0	633	22	AAM39511	Human polypeptide
157	46	39.0	643	22	AAM41297	Human polypeptide
158	46	39.0	989	20	AAY29182	Amino acid sequenc
159	45	38.1	67	21	AAG25663	Arabidopsis thalia
160	45	38.1	72	22	AAU49255	Propionibacterium
161	45	38.1	76	23	ABP10534	Human ORFX protein
162	45	38.1	94	22	ABG12927	Novel human diagno
163	45	38.1	138	21	AAB08117	A polyphenol oxida
164	45	38.1	289	21	AAY68247	Murine class I mol
165	45	38.1	289	21	AAY52901	Murine class I mol
166	45	38.1	289	22	AAB58662	Murine class I pr
167	44.5	37.7	872	17	AAR96039	95 kD protein. Te
168	44	37.3	75	21	AAB43817	Human cancer assoc
169	44	37.3	282	22	ABB72067	Drosophila melanog
170	44	37.3	982	22	ABB62346	Drosophila melanog
171	44	37.3	1086	23	ABB48639	Listeria monocytog
172	44	37.3	1210	22	ABB65149	Drosophila melanog
173	43	36.4	100	23	AAU77112	Human 6-pyruvoyl t
174	43	36.4	158	22	AAU29836	Novel human secret
175	43	36.4	212	21	AAG11179	Arabidopsis thalia
176	43	36.4	212	21	AAG50404	Arabidopsis thalia
177	43	36.4	213	22	AAU29837	Novel human secret
178	43	36.4	240	21	AAG11178	Arabidopsis thalia
179	43	36.4	240	21	AAG50403	Arabidopsis thalia
180	43	36.4	260	22	ABB61679	Drosophila melanog
181	43	36.4	266	21	AAG11177	Arabidopsis thalia
182	43	36.4	266	21	AAG50402	Arabidopsis thalia
183	43	36.4	401	18	AAW33109	Streptomyces sp. 1
184	43	36.4	526	22	ABB64068	Drosophila melanog
185	43	36.4	1027	18	AAW20217	H. pylori cytplasm
186	43	36.4	2440	18	AAW20828	H. pylori cytoplas
187	42.5	36.0	439	20	AAY35368	C. pneumoniae prot
188	42.5	36.0	731	22	ABG30155	Novel human diagno
189	42	35.6	85	23	ABP35021	Human ORF3994 prot
190	42	35.6	96	23	ABP10629	Human ORFX protein
191	42	35.6	228	21	AAG58305	Arabidopsis thalia
192	42	35.6	302	12	AAR10222	Urate oxidase enco
193	42	35.6	302	12	AAR12811	A.flavus urate oxi
194	42	35.6	323	22	AAB94964	Human protein sequ
195	42	35.6	396	20	AAW82710	Soil derived pepti
196	42	35.6	502	21	AAG39497	Arabidopsis thalia
197	42	35.6	506	22	ABG17579	Novel human diagno
198	42	35.6	511	21	AAG39496	Arabidopsis thalia
199	42	35.6	514	21	AAG45247	Arabidopsis thalia
200	42	35.6	523	21	AAG45246	Arabidopsis thalia

ALIGNMENTS

RESULT 1
AAR63162
ID AAR63162 standard; Protein; 108 AA.
XX
AC AAR63162;
XX
DT 23-JUN-1995 (first entry)
XX
DE Human growth differentiation factor-8 partial sequence.
XX
KW Growth differentiation factor-8; GDF-8; cell proliferation;
KW adipocyte; obesity; transforming growth factor-beta.
XX
OS Homo sapiens.
XX
PN WO9421681-A.
XX
PD 29-SEP-1994.
XX
PF 18-MAR-1994; 94WO-US03019.
XX
PR 19-MAR-1993; 93US-0033923.
XX
PA (UYJO) UNIV JOHNS HOPKINS SCHOOL MED.

```
XX
PI   Lee S,  Mcpherron AC;
XX
DR   WPI; 1994-316943/39.
DR   Q-PSDB; Q76381.
XX
PT   New growth differentiation factor 8 - useful for treatment and
PT   diagnosis of cell proliferative disorders esp. of muscle.
XX
PS   Disclosure; Page 44; 84pp; English.
XX
CC   GDF-8 can be used to maintain cells before transplantation; to
CC   improve efficiency of cell fusion and to treat obesity or diseases
CC   related to abnormal adipocyte proliferation.
XX
SQ   Sequence   108 AA;

  Query Match             100.0%;  Score 118;  DB 15;  Length 108;
  Best Local Similarity   100.0%;  Pred. No. 3.2e-11;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      1 FVFLQKYPHTHLVHQANPRGS 21
          |||||||||||||||||||||
Db     54 FVFLQKYPHTHLVHQANPRGS 74


RESULT 2
AAW69884
ID   AAW69884 standard; Protein; 108 AA.
XX
AC   AAW69884;
XX
DT   07-DEC-1998  (first entry)
XX
DE   Human growth differentiation factor-8 C-terminal fragment.
XX
KW   Growth differentiation factor-8; GDF-8; human; transgenic animal;
KW   transforming growth factor-beta; muscle; meat; inhibitor; obesity;
KW   neuromuscular disease; muscular dystrophy; cachexia; AIDS; cancer;
KW   therapy.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   Cleavage-site   1..2
FT   Cleavage-site   3..4
FT   Protein         5..108
FT                   /note= "mature polypeptide"
XX
PN   WO9833887-A1.
XX
PD   06-AUG-1998.
XX
PF   05-FEB-1998;   98WO-US02479.
XX
PR   23-MAY-1997;   97US-0862445.
PR   05-FEB-1997;   97US-0795071.
PR   28-APR-1997;   97US-0847910.
XX
PA   (UYJO ) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI   Lee S,  McPherron AC;
XX
DR   WPI; 1998-437444/37.
DR   N-PSDB; AAV45810.
XX
PT   Transgenic animals with gene for growth differentiation factor-8
PT   disrupted - have increased muscle and reduced cholesterol contents,
PT   also use of GDF-8 inhibitors for treating cancer, obesity,
PT   neuromuscular disease
XX
PS   Example 2; Page 59; 125pp; English.
XX
CC   This is the amino acid sequence of the C-terminal portion of human
CC   growth differentiation factor-8 (GDF-8), a novel member of the
CC   transforming growth factor-beta superfamily that appears to relate
CC   to various cell proliferative disorders, especially those involving
CC   muscle, nerve and adipose tissue.  The sequence was deduced from a
CC   partial genomic clone (see AAV45810).  A full-length sequence (see
CC   AAW69885) has been deduced from a cDNA clone (see AAV45813).  The
CC   invention provides novel mammalian and avian GDF-8 proteins (see
CC   AAW69883-92).  A transgenic non-human animal is claimed in which
CC   GDF-8 expression is disrupted or interfered with.  Also claimed
CC   are: (1) chicken or turkey eggs or meat, beef, milk, pork and lamb
CC   from these animals; (2) method for increasing muscle mass in
CC   animals by administering an antibody (Ab) that binds to GDF-8; (3)
CC   inhibiting the action of GDF-8 by treating foetal or adult muscle
CC   or progenitor cells with a GDF-8 inhibitor; (4) isolated nucleic
CC   acid encoding a GDF-8 protein truncated by loss of the C-terminal
CC   active fragment.  The transgenic animals have increased muscle mass
CC   and for poultry reduced cholesterol contents.  Method (3) is used
CC   to treat muscle wasting or neuromuscular diseases, muscular atrophy
CC   and aging, particularly muscular dystrophy, spinal cord or
CC   traumatic injuries, congestive or obstructive lung disease, AIDS
CC   and cachexia.  Method (4) is used to treat cancer of muscle,
CC   connective tissue and bone, or obesity.  Also (not claimed) GDF-8
CC   can be used to maintain myoblasts intended for transplanting or to
CC   improve efficiency of fusion.  Ab can be used to detect and
CC   quantify GDF-8 (particularly in muscle, for diagnosis or monitoring),
CC   also for immunotherapy and in vivo imaging.
XX
SQ   Sequence   108 AA;

  Query Match             100.0%;  Score 118;  DB 19;  Length 108;
  Best Local Similarity   100.0%;  Pred. No. 3.2e-11;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      1 FVFLQKYPHTHLVHQANPRGS 21
          |||||||||||||||||||||
Db     54 FVFLQKYPHTHLVHQANPRGS 74


RESULT 3
AAY15387
ID   AAY15387 standard; Protein; 108 AA.
XX
AC   AAY15387;
XX
DT   08-DEC-1999  (first entry)
XX
DE   Partial amino acid sequence of a human GDF-8 precursor.
XX
KW   growth differentiation factor; tissue growth; muscle growth;
KW   cell differentiation; animal feed; muscle disorder;
KW   bone degeneration; nerve degeneration; GDF-8; development;
KW   transforming growth factor beta; TGF-beta.
XX
OS   Homo sapiens.
XX
PN   WO9940181-A1.
XX
PD   12-AUG-1999.
XX
PF   05-FEB-1999;   99WO-US02511.
XX
PR   28-JUL-1998;   98US-0124180.
PR   05-FEB-1998;   98US-0019070.
XX
PA   (UYJO ) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI   Lee S,  McPherron AC;
XX
DR   WPI; 1999-494289/41.
DR   N-PSDB; AAZ06447.
XX
PT   New differentiation factor useful for treating neurodegenerative
```

PT diseases
XX
PS Example 2; Fig 2b; 138pp; English.
XX
CC This is the amino acid sequence of the Growth Differentiation
CC Factor-8 precursor protein. The amino acid sequences of the human and
CC mouse amino acid sequences in this region are 100% identical.
CC GDF-8 has been shown to result in increased bone and muscle mass (such
CC as ribs) when expressed in reduced amounts. GDF-8 minus transgenic
CC animals and forms of animal feed that can inhibit/reduce production of
CC GDF-8 are of commercial interest.
CC GDF-8 expression may also have a role in the therapy of abnormal growth
CC of muscle, bone or adipose tissue. A GDF-8 monoclonal antibody, GDF-8
CC antisense molecule or dominant negative polypeptide could be used with
CC foetal or adult muscle cells, bone cells or progenitor cells. These
CC agents can be administered to a patient suffering from a disorder such
CC as muscle wasting disease, neuro muscular disorder, muscle atrophy,
CC osteoporosis, bone degenerative diseases, obesity or other adipocyte
CC cell disorders, and aging for example.
XX
SQ Sequence 108 AA;

Query Match 100.0%; Score 118; DB 20; Length 108;
Best Local Similarity 100.0%; Pred. No. 3.2e-11;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FVFLQKYPHTHLVHQANPRGS 21
||||||||||||||||||||
Db 54 FVFLQKYPHTHLVHQANPRGS 74

RESULT 4
AAB73183
ID AAB73183 standard; Protein; 108 AA.
XX
AC AAB73183;
XX
DT 11-MAY-2001 (first entry)
XX
DE Human GDF-8 #1.
XX
KW Gene therapy; growth differentiation factor-8; GDF-8; AIDS; cachexia;
KW neurodegenerative disease; amyotrophic lateral sclerosis; obesity;
KW muscular dystrophy; musculodegenerative disease; tissue repair;
KW muscle wasting disease; neuromuscular disorder; spinal cord injury;
KW traumatic injury; congestive obstructive pulmonary disease.
XX
OS Homo sapiens.
XX
PN WO200112777-A2.
XX
PD 22-FEB-2001.
XX
PF 17-AUG-2000; 2000WO-US22884.
XX
PR 19-AUG-1999; 99US-0378238.
XX
PA (UYJO) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI Lee S, McPherron AC;
XX
DR WPI; 2001-211209/21.
DR N-PSDB; AAF63548.
XX
PT New substantially purified growth differentiation factor-8 polypeptide,
PT useful for treating muscle wasting disease, obesity, muscular
PT dystrophy, neuromuscular disorder, acquired immunodeficiency syndrome
PT and cachexia -
XX
PS Example 2; Fig 2; 124pp; English.
XX
CC The present invention relates to growth differentiation factor-8 (GDF-8)
CC coding sequences and proteins. The present sequence is a GDF-8 protein,
CC which was isolated in the present invention. GDF-8 is useful for treating
CC neurodegenerative diseases (e.g. amyotrophic lateral sclerosis and
CC muscular dystrophy), musculodegenerative diseases or in tissue repair due
CC to trauma, obesity and disorders related to abnormal proliferation of
CC adipocytes. GDF-8 is also useful for treating malignancies of the various
CC organ systems, particularly cells in muscle or adipose tissues and in
CC gene therapy for the treatment of cell proliferative or immunological
CC diseases mediated by GDF-8. In addition, GDF-8 is also useful for
CC treating muscle wasting disease, neuromuscular disorder, spinal cord
CC injury, traumatic injury, congestive obstructive pulmonary disease
CC (COPD), AIDS or cachexia.
XX
SQ Sequence 108 AA;

Query Match 100.0%; Score 118; DB 22; Length 108;
Best Local Similarity 100.0%; Pred. No. 3.2e-11;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FVFLQKYPHTHLVHQANPRGS 21
||||||||||||||||||||
Db 54 FVFLQKYPHTHLVHQANPRGS 74

RESULT 5
AAB20141
ID AAB20141 standard; Protein; 109 AA.
XX
AC AAB20141;
XX
DT 30-APR-2001 (first entry)
XX
DE Human growth differentiation factor 8 C-terminal region.
XX
KW Growth differentiation factor 8; GDF-8; myostatin; down-regulation;
KW vaccine; muscle; meat; cachexia; cardiant; human; mutant; mutein.
XX
OS Homo sapiens.
OS Synthetic.
XX
PN WO200105820-A2.
XX
PD 25-JAN-2001.
XX
PF 20-JUL-2000; 2000WO-DK00413.
XX
PR 20-JUL-1999; 99DK-0001014.
PR 26-JUL-1999; 99US-0145275.
XX
PA (MEBI-) M & E BIOTECH AS.
XX
PI Halkier T, Mouritsen S, Klysner S;
XX
DR WPI; 2001-112680/12.
XX
PT Increasing the muscle mass of animals used in meat production by down
PT regulating growth differentiation factor 8 (GDF-8) activity in the
PT animal through induction of anti-GDF-8 antibody production -
XX
PS Claim 17; Page 93-94; 110pp; English.
XX
CC The present sequence comprises the 109 amino acid residue
CC C-terminal region of human growth differentiation factor 8
CC (GDF-8), i.e. residues 267-375 of the full-length protein (see
CC AAB20131). The homodimer of this region is thought to be the
CC biologically active form of GDF-8. It is an object of the
CC invention to produce a recombinant therapeutic vaccine capable of
CC effecting down-regulation of GDF-8 in order to increase the muscle
CC growth rate of farm animals. Variants of GDF-8 (see AAB20145-53)
CC are provided that are capable of breaking autotolerance against
CC autologous GDF-8. These comprise the C-terminal portion of human
CC GDF-8 in which a portion of the native sequence is replaced by a
CC T-cell epitope such as the promiscuous tetanus toxin T-cell epitope
CC P2 or P30. The high number (9) of Cys residues in the C-terminal

CC region limits the possible sites in which the T-cell epitope can be
CC positioned without major disturbance of the native 3-dimensional
CC structure of the protein. Nucleic acids encoding the GDF-8 variants
CC can be used for genetic immunisation of the animals. Down-regulation
CC of GDF-8 activity can increase muscle mass by up to at least 45% in
CC cattle, pigs and poultry used for meat production, reducing the need
CC for antibiotic feed-additives. Anti-GDF8 vaccines can be used to
CC treat human diseases such as cancer cachexia where muscle atrophy is
CC pronounced and for patients suffering from acute and chronic heart
CC failure.
XX
SQ Sequence 109 AA;

Query Match 100.0%; Score 118; DB 22; Length 109;
Best Local Similarity 100.0%; Pred. No. 3.2e-11;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FVFLQKYPHTHLVHQANPRGS 21
||||||||||||||||||||||
Db 49 FVFLQKYPHTHLVHQANPRGS 69

RESULT 6
AAB20142
ID AAB20142 standard; Protein; 109 AA.
XX
AC AAB20142;
XX
DT 30-APR-2001 (first entry)
XX
DE Cattle growth differentiation factor 8 C-terminal region.
XX
KW Growth differentiation factor 8; GDF-8; myostatin; down-regulation;
KW vaccine; muscle; meat; cachexia; cardiant; cattle; mutant; mutein.
XX
OS Bos taurus.
OS Synthetic.
XX
PN WO200105820-A2.
XX
PD 25-JAN-2001.
XX
PF 20-JUL-2000; 2000WO-DK00413.
XX
PR 20-JUL-1999; 99DK-0001014.
PR 26-JUL-1999; 99US-0145275.
XX
PA (MEBI-) M & E BIOTECH AS.
XX
PI Halkier T, Mouritsen S, Klysner S;
XX
DR WPI; 2001-112680/12.
XX
PT Increasing the muscle mass of animals used in meat production by down
PT regulating growth differentiation factor 8 (GDF-8) activity in the
PT animal through induction of anti-GDF-8 antibody production -
XX
PS Claim 17; Page 94-95; 110pp; English.
XX
CC The present sequence comprises the 109 amino acid residue
CC C-terminal region of cattle growth differentiation factor 8
CC (GDF-8), i.e. residues 267-375 of the full-length protein (see
CC AAB20132). The homodimer of this region is thought to be the
CC biologically active form of GDF-8. It is an object of the
CC invention to produce a recombinant therapeutic vaccine capable of
CC effecting down-regulation of GDF-8 in order to increase the muscle
CC growth rate of farm animals. Variants of GDF-8 (see AAB20145-53)
CC are provided that are capable of breaking autotolerance against
CC autologous GDF-8. These comprise the C-terminal portion of human
CC GDF-8 in which a portion of the native sequence is replaced by a
CC T-cell epitope such as the promiscuous tetanus toxin T-cell epitope
CC P2 or P30. The high number of Cys residues in the C-terminal region
CC limits the possible sites in which the T-cell epitope can be
CC positioned without major disturbance of the native 3-dimensional
CC structure of the protein. Nucleic acids encoding the GDF-8 variants
CC can be used for genetic immunisation of the animals. Down-regulation
CC of GDF-8 activity can increase muscle mass by up to at least 45% in
CC cattle, pigs and poultry used for meat production, reducing the need
CC for antibiotic feed-additives. Anti-GDF8 vaccines can be used to
CC treat human diseases such as cancer cachexia where muscle atrophy is
CC pronounced and for patients suffering from acute and chronic heart
CC failure.
XX
SQ Sequence 109 AA;

Query Match 100.0%; Score 118; DB 22; Length 109;
Best Local Similarity 100.0%; Pred. No. 3.2e-11;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FVFLQKYPHTHLVHQANPRGS 21
||||||||||||||||||||||
Db 49 FVFLQKYPHTHLVHQANPRGS 69

RESULT 7
AAB20145
ID AAB20145 standard; Protein; 109 AA.
XX
AC AAB20145;
XX
DT 30-APR-2001 (first entry)
XX
DE Growth differentiation factor 8 AutoVac construct GDF-8 P2-1.
XX
KW Growth differentiation factor 8; GDF-8; myostatin; tetanus toxin;
KW T-cell epitope; down-regulation; vaccine; muscle; meat; cachexia;
KW cardiant; human; mutant; mutein.
XX
OS Chimeric - Homo sapiens.
OS Chimeric - Clostridium tetani.
OS Synthetic.
XX
FH Key Location/Qualifiers
FT Region 1..17
FT /note= "identical to residues 267-283 of human
FT GDF-8"
FT Region 18..32
FT /note= "tetanus toxoid P2 epitope"
FT Region 33..109
FT /note= "identical to residues 299-375 of human
FT GDF-8"
FT Misc-difference 73
FT /note= "Cys-73 may be substituted by Ser to avoid
FT disulfide bond formation"
FT Misc-difference 90..91
FT /note= "optionally replaced by Glu-Gly"
XX
PN WO200105820-A2.
XX
PD 25-JAN-2001.
XX
PF 20-JUL-2000; 2000WO-DK00413.
XX
PR 20-JUL-1999; 99DK-0001014.
PR 26-JUL-1999; 99US-0145275.
XX
PA (MEBI-) M & E BIOTECH AS.
XX
PI Halkier T, Mouritsen S, Klysner S;
XX
DR WPI; 2001-112680/12.
XX
PT Increasing the muscle mass of animals used in meat production by down
PT regulating growth differentiation factor 8 (GDF-8) activity in the
PT animal through induction of anti-GDF-8 antibody production -
XX

```
PS   Example 1; Page 96; 110pp; English.
XX
CC   The present sequence is that of AutoVac construct GDF-8 P2-1,
CC   comprising the 109 C-terminal amino acid residues of human
CC   growth differentiation factor 8 (GDF-8) in which residues 18-32 are
CC   replaced by the promiscuous tetanus toxin T-cell epitope P2 (see
CC   AAB20143).  It is an object of the invention to produce a
CC   recombinant therapeutic vaccine that is capable of effecting
CC   down-regulation of GDF-8 in order to increase the muscle growth
CC   rate of farm animals.  The vaccines (see AAB20145-53) are capable
CC   of breaking autotolerance against autologous GDF-8.  They comprise
CC   the C-terminal portion of human GDF-8 in which a portion of the
CC   native sequence is replaced by a T-cell epitope such as P2, with
CC   minimal disturbance of the authentic 3-dimensional structure of
CC   the protein.  Nucleic acids encoding the GDF-8 variants can be used
CC   for genetic immunisation of the animals.  Down-regulation of GDF-8
CC   activity can increase muscle mass by up to at least 45% in cattle,
CC   pigs and poultry used for meat production, reducing the need for
CC   antibiotic feed-additives.  Anti-GDF8 vaccines can be used to
CC   treat human diseases such as cancer cachexia where muscle atrophy is
CC   pronounced and for patients suffering from acute and chronic heart
CC   failure.
XX
SQ   Sequence   109 AA;

  Query Match             100.0%;  Score 118;  DB 22;  Length 109;
  Best Local Similarity   100.0%;  Pred. No. 3.2e-11;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db      49 FVFLQKYPHTHLVHQANPRGS 69


RESULT 8
AAB20147
ID   AAB20147 standard; Protein; 109 AA.
XX
AC   AAB20147;
XX
DT   30-APR-2001  (first entry)
XX
DE   Growth differentiation factor 8 AutoVac construct GDF-8 P2-3.
XX
KW   Growth differentiation factor 8; GDF-8; myostatin; tetanus toxin;
KW   T-cell epitope; down-regulation; vaccine; muscle; meat; cachexia;
KW   cardiant; human; mutant; mutein.
XX
OS   Chimeric - Homo sapiens.
OS   Chimeric - Clostridium tetani.
OS   Synthetic.
XX
FH   Key             Location/Qualifiers
FT   Region          1..82
FT                   /note= "identical to residues 267-348 of human
FT                         GDF-8"
FT   Region          83..97
FT                   /note= "tetanus toxoid P2 epitope"
FT   Region          98..109
FT                   /note= "identical to residues 364-375 of human
FT                         GDF-8"
FT   Misc-difference 73
FT                   /note= "Cys-73 may be substituted by Ser to avoid
FT                         disulfide bond formation"
FT   Misc-difference 90..91
FT                   /note= "optionally replaced by Glu-Gly"
XX
PN   WO200105820-A2.
XX
PD   25-JAN-2001.
XX
PF   20-JUL-2000; 2000WO-DK00413.
XX
PR   20-JUL-1999;   99DK-0001014.
PR   26-JUL-1999;   99US-0145275.
XX
PA   (MEBI-) M & E BIOTECH AS.
XX
PI   Halkier T,  Mouritsen S,  Klysner S;
XX
DR   WPI; 2001-112680/12.
XX
PT   Increasing the muscle mass of animals used in meat production by down
PT   regulating growth differentiation factor 8 (GDF-8) activity in the
PT   animal through induction of anti-GDF-8 antibody production  -
XX
PS   Example 1; Page 99; 110pp; English.
XX
CC   The present sequence is that of AutoVac construct GDF-8 P2-3,
CC   comprising the 109 C-terminal amino acid residues of human
CC   growth differentiation factor 8 (GDF-8) in which residues 83-97 are
CC   replaced by the promiscuous tetanus toxin T-cell epitope P2 (see
CC   AAB20143).  It is an object of the invention to produce a
CC   recombinant therapeutic vaccine that is capable of effecting
CC   down-regulation of GDF-8 in order to increase the muscle growth
CC   rate of farm animals.  The vaccines (see AAB20145-53) are capable
CC   of breaking autotolerance against autologous GDF-8.  They comprise
CC   the C-terminal portion of human GDF-8 in which a portion of the
CC   native sequence is replaced by a T-cell epitope such as P2, with
CC   minimal disturbance of the authentic 3-dimensional structure of
CC   the protein.  Nucleic acids encoding the GDF-8 variants can be used
CC   for genetic immunisation of the animals.  Down-regulation of GDF-8
CC   activity can increase muscle mass by up to at least 45% in cattle,
CC   pigs and poultry used for meat production, reducing the need for
CC   antibiotic feed-additives.  Anti-GDF8 vaccines can be used to
CC   treat human diseases such as cancer cachexia where muscle atrophy is
CC   pronounced and for patients suffering from acute and chronic heart
CC   failure.
XX
SQ   Sequence   109 AA;

  Query Match             100.0%;  Score 118;  DB 22;  Length 109;
  Best Local Similarity   100.0%;  Pred. No. 3.2e-11;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db      49 FVFLQKYPHTHLVHQANPRGS 69


RESULT 9
AAB20148
ID   AAB20148 standard; Protein; 109 AA.
XX
AC   AAB20148;
XX
DT   30-APR-2001  (first entry)
XX
DE   Growth differentiation factor 8 AutoVac construct GDF-8 P30-1.
XX
KW   Growth differentiation factor 8; GDF-8; myostatin; tetanus toxin;
KW   T-cell epitope; down-regulation; vaccine; muscle; meat; cachexia;
KW   cardiant; human; mutant; mutein.
XX
OS   Chimeric - Homo sapiens.
OS   Chimeric - Clostridium tetani.
OS   Synthetic.
XX
FH   Key             Location/Qualifiers
FT   Region          1..20
FT                   /note= "identical to residues 267-286 of human
FT                         GDF-8"
FT   Region          21..41
FT                   /note= "tetanus toxoid P2 epitope"
FT   Region          42..109
FT                   /note= "identical to residues 307-375 of human
```

```
FT                              GDF-8"
FT   Misc-difference 73
FT                   /note= "Cys-73 may be substituted by Ser to avoid
FT                    disulfide bond formation"
FT   Misc-difference 90..91
FT                   /note= "optionally replaced by Glu-Gly"
XX
PN   WO200105820-A2.
XX
PD   25-JAN-2001.
XX
PF   20-JUL-2000; 2000WO-DK00413.
XX
PR   20-JUL-1999;   99DK-0001014.
PR   26-JUL-1999;   99US-0145275.
XX
PA   (MEBI-) M & E BIOTECH AS.
XX
PI   Halkier T,  Mouritsen S,  Klysner S;
XX
DR   WPI; 2001-112680/12.
XX
PT   Increasing the muscle mass of animals used in meat production by down
PT   regulating growth differentiation factor 8 (GDF-8) activity in the
PT   animal through induction of anti-GDF-8 antibody production  -
XX
PS   Example 1; Page 99; 110pp; English.
XX
CC   The present sequence is that of AutoVac construct GDF-8 P30-1,
CC   comprising the 109 C-terminal amino acid residues of human
CC   growth differentiation factor 8 (GDF-8) in which residues 21-41 are
CC   replaced by the promiscuous tetanus toxin T-cell epitope P30 (see
CC   AAB20144).  It is an object of the invention to produce a
CC   recombinant therapeutic vaccine that is capable of effecting
CC   down-regulation of GDF-8 in order to increase the muscle growth
CC   rate of farm animals.  The vaccines (see AAB20145-53) are capable
CC   of breaking autotolerance against autologous GDF-8.  They comprise
CC   the C-terminal portion of human GDF-8 in which a portion of the
CC   native sequence is replaced by a T-cell epitope such as P30, with
CC   minimal disturbance of the authentic 3-dimensional structure of
CC   the protein.  Nucleic acids encoding the GDF-8 variants can be used
CC   for genetic immunisation of the animals.  Down-regulation of GDF-8
CC   activity can increase muscle mass by up to at least 45% in cattle,
CC   pigs and poultry used for meat production, reducing the need for
CC   antibiotic feed-additives.  Anti-GDF8 vaccines can be used to
CC   treat human diseases such as cancer cachexia where muscle atrophy is
CC   pronounced and for patients suffering from acute and chronic heart
CC   failure.
XX
SQ   Sequence   109 AA;

  Query Match             100.0%;  Score 118;  DB 22;  Length 109;
  Best Local Similarity   100.0%;  Pred. No. 3.2e-11;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db      49 FVFLQKYPHTHLVHQANPRGS 69


RESULT 10
AAB20150
ID   AAB20150 standard; Protein; 109 AA.
XX
AC   AAB20150;
XX
DT   30-APR-2001  (first entry)
XX
DE   Growth differentiation factor 8 AutoVac construct GDF-8 P30-3A.
XX
KW   Growth differentiation factor 8; GDF-8; myostatin; tetanus toxin;
KW   T-cell epitope; down-regulation; vaccine; muscle; meat; cachexia;
KW   cardiant; human; mutant; mutein.
XX
OS   Chimeric - Homo sapiens.
OS   Chimeric - Clostridium tetani.
OS   Synthetic.
XX
FH   Key             Location/Qualifiers
FT   Region          1..78
FT                   /note= "identical to residues 267-345 of human
FT                    GDF-8"
FT   Region          79..99
FT                   /note= "tetanus toxoid P2 epitope"
FT   Region          100..109
FT                   /note= "identical to residues 366-375 of human
FT                    GDF-8"
FT   Misc-difference 73
FT                   /note= "Cys-73 may be substituted by Ser to avoid
FT                    disulfide bond formation"
FT   Misc-difference 90..91
FT                   /note= "optionally replaced by Glu-Gly"
XX
PN   WO200105820-A2.
XX
PD   25-JAN-2001.
XX
PF   20-JUL-2000; 2000WO-DK00413.
XX
PR   20-JUL-1999;   99DK-0001014.
PR   26-JUL-1999;   99US-0145275.
XX
PA   (MEBI-) M & E BIOTECH AS.
XX
PI   Halkier T,  Mouritsen S,  Klysner S;
XX
DR   WPI; 2001-112680/12.
XX
PT   Increasing the muscle mass of animals used in meat production by down
PT   regulating growth differentiation factor 8 (GDF-8) activity in the
PT   animal through induction of anti-GDF-8 antibody production  -
XX
PS   Example 1; Page 102-103; 110pp; English.
XX
CC   The present sequence is that of AutoVac construct GDF-8 P30-3A,
CC   comprising the 109 C-terminal amino acid residues of human
CC   growth differentiation factor 8 (GDF-8) in which residues 79-99 are
CC   replaced by the promiscuous tetanus toxin T-cell epitope P30 (see
CC   AAB20144).  It is an object of the invention to produce a
CC   recombinant therapeutic vaccine that is capable of effecting
CC   down-regulation of GDF-8 in order to increase the muscle growth
CC   rate of farm animals.  The vaccines (see AAB20145-53) are capable
CC   of breaking autotolerance against autologous GDF-8.  They comprise
CC   the C-terminal portion of human GDF-8 in which a portion of the
CC   native sequence is replaced by a T-cell epitope such as P30, with
CC   minimal disturbance of the authentic 3-dimensional structure of
CC   the protein.  Nucleic acids encoding the GDF-8 variants can be used
CC   for genetic immunisation of the animals.  Down-regulation of GDF-8
CC   activity can increase muscle mass by up to at least 45% in cattle,
CC   pigs and poultry used for meat production, reducing the need for
CC   antibiotic feed-additives.  Anti-GDF8 vaccines can be used to
CC   treat human diseases such as cancer cachexia where muscle atrophy is
CC   pronounced and for patients suffering from acute and chronic heart
CC   failure.
XX
SQ   Sequence   109 AA;

  Query Match             100.0%;  Score 118;  DB 22;  Length 109;
  Best Local Similarity   100.0%;  Pred. No. 3.2e-11;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db      49 FVFLQKYPHTHLVHQANPRGS 69
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RESULT 11
AAB20151
ID   AAB20151 standard; Protein; 109 AA.
XX
AC   AAB20151;
XX
DT   30-APR-2001  (first entry)
XX
DE   Growth differentiation factor 8 AutoVac construct GDF-8 P30-3B.
XX
KW   Growth differentiation factor 8; GDF-8; myostatin; tetanus toxin;
KW   T-cell epitope; down-regulation; vaccine; muscle; meat; cachexia;
KW   cardiant; human; mutant; mutein.
XX
OS   Chimeric - Homo sapiens.
OS   Chimeric - Clostridium tetani.
OS   Synthetic.
XX
FH   Key             Location/Qualifiers
FT   Region          1..83
FT                   /note= "identical to residues 267-349 of human
FT                        GDF-8"
FT   Region          84..104
FT                   /note= "tetanus toxoid P2 epitope"
FT   Region          105..109
FT                   /note= "identical to residues 371-375 of human
FT                        GDF-8"
FT   Misc-difference 73
FT                   /note= "Cys-73 may be substituted by Ser to avoid
FT                        disulfide bond formation"
FT   Misc-difference 90..91
FT                   /note= "optionally replaced by Glu-Gly"
XX
PN   WO200105820-A2.
XX
PD   25-JAN-2001.
XX
PF   20-JUL-2000; 2000WO-DK00413.
XX
PR   20-JUL-1999;   99DK-0001014.
PR   26-JUL-1999;   99US-0145275.
XX
PA   (MEBI-) M & E BIOTECH AS.
XX
PI   Halkier T,  Mouritsen S,  Klysner S;
XX
DR   WPI; 2001-112680/12.
XX
PT   Increasing the muscle mass of animals used in meat production by down
PT   regulating growth differentiation factor 8 (GDF-8) activity in the
PT   animal through induction of anti-GDF-8 antibody production  -
XX
PS   Example 1; Page 104; 110pp; English.
XX
CC   The present sequence is that of AutoVac construct GDF-8 P30-3B,
CC   comprising the 109 C-terminal amino acid residues of human
CC   growth differentiation factor 8 (GDF-8) in which residues 84-104
CC   are replaced by the promiscuous tetanus toxin T-cell epitope P30
CC   (see AAB20144).  It is an object of the invention to produce a
CC   recombinant therapeutic vaccine that is capable of effecting
CC   down-regulation of GDF-8 in order to increase the muscle growth
CC   rate of farm animals.  The vaccines (see AAB20145-53) are capable
CC   of breaking autotolerance against autologous GDF-8.  They comprise
CC   the C-terminal portion of human GDF-8 in which a portion of the
CC   native sequence is replaced by a T-cell epitope such as P30, with
CC   minimal disturbance of the authentic 3-dimensional structure of
CC   the protein.  Nucleic acids encoding the GDF-8 variants can be used
CC   for genetic immunisation of the animals.  Down-regulation of GDF-8
CC   activity can increase muscle mass by up to at least 45% in cattle,
CC   pigs and poultry used for meat production, reducing the need for
CC   antibiotic feed-additives.  Anti-GDF8 vaccines can be used to
CC   treat human diseases such as cancer cachexia where muscle atrophy is
CC   pronounced and for patients suffering from acute and chronic heart
CC   failure.
XX
SQ   Sequence   109 AA;

  Query Match             100.0%;  Score 118;  DB 22;  Length 109;
  Best Local Similarity   100.0%;  Pred. No. 3.2e-11;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db      49 FVFLQKYPHTHLVHQANPRGS 69


RESULT 12
AAM51935
ID   AAM51935 standard; protein; 109 AA.
XX
AC   AAM51935;
XX
DT   01-FEB-2002  (first entry)
XX
DE   Human TGFbeta protein superfamily protein GDF8.
XX
KW   Human; TGFbeta; transforming growth factor beta; mutant; antagonist;
KW   agonist; ectopic bone formation; psoriasis; muscular atrophy; scar;
KW   formation; fibrosis; cirrhosis; osteopathic; antipsoriatic;
KW   antifibrotic; hepatotropic; vulnerary; GDF8.
XX
OS   Homo sapiens.
XX
PN   DE10026713-A1.
XX
PD   06-DEC-2001.
XX
PF   30-MAY-2000; 2000DE-1026713.
XX
PR   30-MAY-2000; 2000DE-1026713.
XX
PA   (SEBA/) SEBALD W.
XX
PI   Sebald W,  Nickel J;
XX
DR   WPI; 2002-042559/06.
XX
PT   New mutein of transforming growth factor-beta superfamily protein,
PT   useful for treating or preventing e.g. ectopic bone formation, competes
PT   for receptor binding  -
XX
PS   Disclosure; Fig 6; 54pp; German.
XX
CC   The present invention relates to muteins of a chain of a protein which,
CC   when in the form of a homodimer, has antagonistic or partial agonistic
CC   activity, and where the mutation results in the protein binding with low
CC   affinity to its receptor. The protein is a member of the transforming
CC   growth factor beta (TGFbeta) superfamily. The mutant sequences of the
CC   invention can be used in the treatment of diseases associated with the
CC   overexpression of TGFbeta family proteins, including ectopic bone
CC   formation, psoriasis, muscular atrophy, scar formation, fibrosis and
CC   cirrhosis. The present sequence is the human GDF8 protein.
XX
SQ   Sequence   109 AA;

  Query Match             100.0%;  Score 118;  DB 23;  Length 109;
  Best Local Similarity   100.0%;  Pred. No. 3.2e-11;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db      49 FVFLQKYPHTHLVHQANPRGS 69


RESULT 13
AAR63161
```

```
ID   AAR63161 standard; Protein; 126 AA.
XX
AC   AAR63161;
XX
DT   23-JUN-1995  (first entry)
XX
DE   Mouse growth differentiation factor-8 partial sequence.
XX
KW   Growth differentiation factor-8; GDF-8; cell proliferation;
KW   adipocyte; obesity; transforming growth factor-beta.
XX
OS   Mus musculus.
XX
PN   WO9421681-A.
XX
PD   29-SEP-1994.
XX
PF   18-MAR-1994;   94WO-US03019.
XX
PR   19-MAR-1993;   93US-0033923.
XX
PA   (UYJO ) UNIV JOHNS HOPKINS SCHOOL MED.
XX
PI   Lee S,  Mcpherron AC;
XX
DR   WPI; 1994-316943/39.
DR   Q-PSDB; Q76380.
XX
PT   New growth differentiation factor 8 - useful for treatment and
PT   diagnosis of cell proliferative disorders esp. of muscle.
XX
PS   Disclosure; Page 41; 84pp; English.
XX
CC   GDF-8 can be used to maintain cells before transplantation; to
CC   improve efficiency of cell fusion and to treat obesity or diseases
CC   related to abnormal adipocyte proliferation.
XX
SQ   Sequence   126 AA;

  Query Match             100.0%;  Score 118;  DB 15;  Length 126;
  Best Local Similarity   100.0%;  Pred. No. 3.8e-11;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db      66 FVFLQKYPHTHLVHQANPRGS 86


RESULT 14
AAW69883
ID   AAW69883 standard; Protein; 126 AA.
XX
AC   AAW69883;
XX
DT   07-DEC-1998  (first entry)
XX
DE   Murine growth differentiation factor-8 C-terminal fragment.
XX
KW   Growth differentiation factor-8; GDF-8; mouse; transgenic animal;
KW   transforming growth factor-beta; muscle; meat; inhibitor; obesity;
KW   neuromuscular disease; muscular dystrophy; cachexia; AIDS; cancer;
KW   therapy.
XX
OS   Mus sp.
XX
FH   Key             Location/Qualifiers
FT   Cleavage-site   13..14
FT   Cleavage-site   16..17
FT   Protein         17..126
FT                   /note= "mature polypeptide"
XX
PN   WO9833887-A1.
XX
PD   06-AUG-1998.
XX
PF   05-FEB-1998;   98WO-US02479.
XX
PR   23-MAY-1997;   97US-0862445.
PR   05-FEB-1997;   97US-0795071.
PR   28-APR-1997;   97US-0847910.
XX
PA   (UYJO ) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI   Lee S,  McPherron AC;
XX
DR   WPI; 1998-437444/37.
DR   N-PSDB; AAV45809.
XX
PT   Transgenic animals with gene for growth differentiation factor-8
PT   disrupted - have increased muscle and reduced cholesterol contents,
PT   also use of GDF-8 inhibitors for treating cancer, obesity,
PT   neuromuscular disease
XX
PS   Example 2; Page 58; 125pp; English.
XX
CC   This is the amino acid sequence of the C-terminal portion of mouse
CC   growth differentiation factor-8 (GDF-8), a novel member of the
CC   transforming growth factor-beta superfamily that appears to relate
CC   to various cell proliferative disorders, especially those involving
CC   muscle, nerve and adipose tissue.  The sequence was deduced from a
CC   partial genomic clone (see AAV45809).  A full-length sequence (see
CC   AAW30689) has been deduced from a cDNA clone (see AAV42113).  The
CC   invention provides novel mammalian and avian GDF-8 proteins (see
CC   AAW69883-92).  A transgenic non-human animal is claimed in which
CC   GDF-8 expression is disrupted or interfered with.  Also claimed
CC   are: (1) chicken or turkey eggs or meat, beef, milk, pork and lamb
CC   from these animals; (2) method for increasing muscle mass in
CC   animals by administering an antibody (Ab) that binds to GDF-8; (3)
CC   inhibiting the action of GDF-8 by treating foetal or adult muscle
CC   or progenitor cells with a GDF-8 inhibitor; (4) isolated nucleic
CC   acid encoding a GDF-8 protein truncated by loss of the C-terminal
CC   active fragment.  The transgenic animals have increased muscle mass
CC   and for poultry reduced cholesterol contents.  Method (3) is used
CC   to treat muscle wasting or neuromuscular diseases, muscular atrophy
CC   and aging, particularly muscular dystrophy, spinal cord or
CC   traumatic injuries, congestive or obstructive lung disease, AIDS
CC   and cachexia.  Method (4) is used to treat cancer of muscle,
CC   connective tissue and bone, or obesity.  Also (not claimed) GDF-8
CC   can be used to maintain myoblasts intended for transplanting or to
CC   improve efficiency of fusion.  Ab can be used to detect and
CC   quantify GDF-8 (particularly in muscle, for diagnosis or monitoring),
CC   also for immunotherapy and in vivo imaging.
XX
SQ   Sequence   126 AA;

  Query Match             100.0%;  Score 118;  DB 19;  Length 126;
  Best Local Similarity   100.0%;  Pred. No. 3.8e-11;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db      66 FVFLQKYPHTHLVHQANPRGS 86


RESULT 15
AAY15386
ID   AAY15386 standard; Protein; 126 AA.
XX
AC   AAY15386;
XX
DT   08-DEC-1999  (first entry)
XX
DE   C-terminal region of mouse Growth Differentiation Factor-8 (GDF-8).
XX
KW   growth differentiation factor; tissue growth; muscle growth;
KW   cell differentiation; animal feed; muscle disorder;
```

```
KW   bone degeneration; nerve degeneration; GDF-8; development;
KW   transforming growth factor beta; TGF-beta.
XX
OS   Mus musculus.
XX
FH   Key             Location/Qualifiers
FT   Cleavage-site   13..14
FT                   /label= Potential_proteolytic_cleavage_site
FT   Cleavage-site   16..17
FT                   /label= Potential_proteolytic_cleavage_site
FT                   /note= "cleavage generates mature protein"
XX
PN   WO9940181-A1.
XX
PD   12-AUG-1999.
XX
PF   05-FEB-1999;   99WO-US02511.
XX
PR   28-JUL-1998;   98US-0124180.
PR   05-FEB-1998;   98US-0019070.
XX
PA   (UYJO ) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI   Lee S,  McPherron AC;
XX
DR   WPI; 1999-494289/41.
DR   N-PSDB; AAZ06446.
XX
PT   New differentiation factor useful for treating neurodegenerative
PT   diseases
XX
PS   Example 2; Fig 2a; 138pp; English.
XX
CC   This is the amino acid sequence of the C-terminal region of the GDF-8
CC   precursor protein. The predicted GDF-8 sequence contains two potential
CC   proteolytic processing sites.
CC   Cleavage of the precursor at the second of these sites would generate
CC   a mature C terminal fragment 109 amino acids in length with a predicted
CC   molecular weight of 12,400.
CC   GDF-8 has been shown to result in increased bone and muscle mass (such
CC   as ribs) when expressed in reduced amounts. GDF-8 minus transgenic
CC   animals and forms of animal feed that can inhibit/reduce production of
CC   GDF-8 are of commercial interest.
CC   GDF-8 expression may also have a role in the therapy of abnormal growth
CC   of muscle, bone or adipose tissue. A GDF-8 monoclonal antibody, GDF-8
CC   antisense molecule or dominant negative polypeptide could be used with
CC   foetal or adult muscle cells, bone cells or progenitor cells. These
CC   agents can be administered to a patient suffering from a disorder such
CC   as muscle wasting disease, neuro muscular disorder, muscle atrophy,
CC   osteoporosis, bone degenerative diseases, obesity or other adipocyte
CC   cell disorders, and aging for example.
XX
SQ   Sequence   126 AA;

  Query Match             100.0%;  Score 118;  DB 20;  Length 126;
  Best Local Similarity   100.0%;  Pred. No. 3.8e-11;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db      66 FVFLQKYPHTHLVHQANPRGS 86


RESULT 16
AAB73182
ID   AAB73182 standard; Protein; 126 AA.
XX
AC   AAB73182;
XX
DT   11-MAY-2001  (first entry)
XX
DE   Murine GDF-8 #1.
XX
KW   Gene therapy; growth differentiation factor-8; GDF-8; AIDS; cachexia;
KW   neurodegenerative disease; amyotrophic lateral sclerosis; obesity;
KW   muscular dystrophy; musculodegenerative disease; tissue repair;
KW   muscle wasting disease; neuromuscular disorder; spinal cord injury;
KW   traumatic injury; congestive obstructive pulmonary disease.
XX
OS   Mus sp.
XX
PN   WO200112777-A2.
XX
PD   22-FEB-2001.
XX
PF   17-AUG-2000; 2000WO-US22884.
XX
PR   19-AUG-1999;   99US-0378238.
XX
PA   (UYJO ) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI   Lee S,  McPherron AC;
XX
DR   WPI; 2001-211209/21.
DR   N-PSDB; AAF63547.
XX
PT   New substantially purified growth differentiation factor-8 polypeptide,
PT   useful for treating muscle wasting disease, obesity, muscular
PT   dystrophy, neuromuscular disorder, acquired immunodeficiency syndrome
PT   and cachexia  -
XX
PS   Example 2; Fig 2; 124pp; English.
XX
CC   The present invention relates to growth differentiation factor-8 (GDF-8)
CC   coding sequences and proteins. The present sequence is a GDF-8 protein,
CC   which was isolated in the present invention. GDF-8 is useful for treating
CC   neurodegenerative diseases (e.g. amyotrophic lateral sclerosis and
CC   muscular dystrophy), musculodegenerative diseases or in tissue repair due
CC   to trauma, obesity and disorders related to abnormal proliferation of
CC   adipocytes. GDF-8 is also useful for treating malignancies of the various
CC   organ systems, particularly cells in muscle or adipose tissues and in
CC   gene therapy for the treatment of cell proliferative or immunological
CC   diseases mediated by GDF-8. In addition, GDF-8 is also useful for
CC   treating muscle wasting disease, neuromuscular disorder, spinal cord
CC   injury, traumatic injury, congestive obstructive pulmonary disease
CC   (COPD), AIDS or cachexia.
XX
SQ   Sequence   126 AA;

  Query Match             100.0%;  Score 118;  DB 22;  Length 126;
  Best Local Similarity   100.0%;  Pred. No. 3.8e-11;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db      66 FVFLQKYPHTHLVHQANPRGS 86


RESULT 17
AAB73189
ID   AAB73189 standard; Protein; 130 AA.
XX
AC   AAB73189;
XX
DT   11-MAY-2001  (first entry)
XX
DE   Rat GDF-8.
XX
KW   Gene therapy; growth differentiation factor-8; GDF-8; AIDS; cachexia;
KW   neurodegenerative disease; amyotrophic lateral sclerosis; obesity;
KW   muscular dystrophy; musculodegenerative disease; tissue repair;
KW   muscle wasting disease; neuromuscular disorder; spinal cord injury;
KW   traumatic injury; congestive obstructive pulmonary disease.
XX
OS   Rattus sp.
XX
```

PN WO200112777-A2.
XX
PD 22-FEB-2001.
XX
PF 17-AUG-2000; 2000WO-US22884.
XX
PR 19-AUG-1999; 99US-0378238.
XX
PA (UYJO) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI Lee S, McPherron AC;
XX
DR WPI; 2001-211209/21.
DR N-PSDB; AAF63555.
XX
PT New substantially purified growth differentiation factor-8 polypeptide,
PT useful for treating muscle wasting disease, obesity, muscular
PT dystrophy, neuromuscular disorder, acquired immunodeficiency syndrome
PT and cachexia -
XX
PS Example 9; Fig 2; 124pp; English.
XX
CC The present invention relates to growth differentiation factor-8 (GDF-8)
CC coding sequences and proteins. The present sequence is a GDF-8 protein,
CC which was isolated in the present invention. GDF-8 is useful for treating
CC neurodegenerative diseases (e.g. amyotrophic lateral sclerosis and
CC muscular dystrophy), musculodegenerative diseases or in tissue repair due
CC to trauma, obesity and disorders related to abnormal proliferation of
CC adipocytes. GDF-8 is also useful for treating malignancies of the various
CC organ systems, particularly cells in muscle or adipose tissues and in
CC gene therapy for the treatment of cell proliferative or immunological
CC diseases mediated by GDF-8. In addition, GDF-8 is also useful for
CC treating muscle wasting disease, neuromuscular disorder, spinal cord
CC injury, traumatic injury, congestive obstructive pulmonary disease
CC (COPD), AIDS or cachexia.
XX
SQ Sequence 130 AA;

Query Match 100.0%; Score 118; DB 22; Length 130;
Best Local Similarity 100.0%; Pred. No. 3.9e-11;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FVFLQKYPHTHLVHQANPRGS 21
||||||||||||||||||||
Db 70 FVFLQKYPHTHLVHQANPRGS 90

RESULT 18
AAB20153
ID AAB20153 standard; Protein; 160 AA.
XX
AC AAB20153;
XX
DT 30-APR-2001 (first entry)
XX
DE Growth differentiation factor 8 AutoVac construct GDF-8 ext.
XX
KW Growth differentiation factor 8; GDF-8; myostatin; tetanus toxin;
KW T-cell epitope; down-regulation; vaccine; muscle; meat; cachexia;
KW cardiant; human; mutant; mutein.
XX
OS Chimeric - Homo sapiens.
OS Chimeric - Clostridium tetani.
OS Synthetic.
XX
FH Key Location/Qualifiers
FT Region 1..15
FT /note= "identical to residues 215-230 of human
FT GDF-8"
FT Region 16..36
FT /note= "tetanus toxoid P30 epitope"
FT Region 37..51
FT /note= "tetanus toxoid P2 epitope"
FT Region 52..160
FT /note= "identical to residues 267-375 of human
FT GDF-8"
FT Misc-difference 124
FT /note= "Cys-124 may be substituted by Ser to avoid
FT disulfide bond formation"
FT Misc-difference 141..142
FT /note= "optionally replaced by Glu-Gly"
XX
PN WO200105820-A2.
XX
PD 25-JAN-2001.
XX
PF 20-JUL-2000; 2000WO-DK00413.
XX
PR 20-JUL-1999; 99DK-0001014.
PR 26-JUL-1999; 99US-0145275.
XX
PA (MEBI-) M & E BIOTECH AS.
XX
PI Halkier T, Mouritsen S, Klysner S;
XX
DR WPI; 2001-112680/12.
XX
PT Increasing the muscle mass of animals used in meat production by down
PT regulating growth differentiation factor 8 (GDF-8) activity in the
PT animal through induction of anti-GDF-8 antibody production -
XX
PS Example 1; Page 107-108; 110pp; English.
XX
CC The present sequence is that of AutoVac construct GDF-8 ext,
CC which consists of the C-terminal 160 amino acids of human growth
CC differentiation factor 8 (GDF-8, see AAF20131) with residues 16-36
CC substituted by the promiscuous tetanus toxin T-cell epitope P30 (see
CC AAB20144) and residues 37-51 substituted by tetanus toxin T-cell
CC epitope P2 (see AAB20143). It is an object of the invention to
CC produce a recombinant therapeutic vaccine that is capable of effecting
CC down-regulation of GDF-8 in order to increase the muscle growth
CC rate of farm animals. The vaccines (see AAB20145-53) are capable
CC of breaking autotolerance against autologous GDF-8. They comprise
CC the C-terminal portion of human GDF-8 in which a portion of the
CC native sequence is replaced by a T-cell epitope such as P30, with
CC minimal disturbance of the authentic 3-dimensional structure of
CC the protein. Nucleic acids encoding the GDF-8 variants can be used
CC for genetic immunisation of the animals. Down-regulation of GDF-8
CC activity can increase muscle mass by up to at least 45% in cattle,
CC pigs and poultry used for meat production, reducing the need for
CC antibiotic feed-additives. Anti-GDF8 vaccines can be used to
CC treat human diseases such as cancer cachexia where muscle atrophy is
CC pronounced and for patients suffering from acute and chronic heart
CC failure.
XX
SQ Sequence 160 AA;

Query Match 100.0%; Score 118; DB 22; Length 160;
Best Local Similarity 100.0%; Pred. No. 5e-11;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FVFLQKYPHTHLVHQANPRGS 21
||||||||||||||||||||
Db 100 FVFLQKYPHTHLVHQANPRGS 120

RESULT 19
AAB73188
ID AAB73188 standard; Protein; 226 AA.
XX
AC AAB73188;
XX
DT 11-MAY-2001 (first entry)
XX
DE Chicken GDF-8.
XX

```
KW   Gene therapy; growth differentiation factor-8; GDF-8; AIDS; cachexia;
KW   neurodegenerative disease; amyotrophic lateral sclerosis; obesity;
KW   muscular dystrophy; musculodegenerative disease; tissue repair;
KW   muscle wasting disease; neuromuscular disorder; spinal cord injury;
KW   traumatic injury; congestive obstructive pulmonary disease.
XX
OS   Gallus gallus.
XX
PN   WO200112777-A2.
XX
PD   22-FEB-2001.
XX
PF   17-AUG-2000; 2000WO-US22884.
XX
PR   19-AUG-1999;   99US-0378238.
XX
PA   (UYJO ) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI   Lee S,  McPherron AC;
XX
DR   WPI; 2001-211209/21.
DR   N-PSDB; AAF63554.
XX
PT   New substantially purified growth differentiation factor-8 polypeptide,
PT   useful for treating muscle wasting disease, obesity, muscular
PT   dystrophy, neuromuscular disorder, acquired immunodeficiency syndrome
PT   and cachexia  -
XX
PS   Example 9; Fig 2; 124pp; English.
XX
CC   The present invention relates to growth differentiation factor-8 (GDF-8)
CC   coding sequences and proteins. The present sequence is a GDF-8 protein,
CC   which was isolated in the present invention. GDF-8 is useful for treating
CC   neurodegenerative diseases (e.g. amyotrophic lateral sclerosis and
CC   muscular dystrophy), musculodegenerative diseases or in tissue repair due
CC   to trauma, obesity and disorders related to abnormal proliferation of
CC   adipocytes. GDF-8 is also useful for treating malignancies of the various
CC   organ systems, particularly cells in muscle or adipose tissues and in
CC   gene therapy for the treatment of cell proliferative or immunological
CC   diseases mediated by GDF-8. In addition, GDF-8 is also useful for
CC   treating muscle wasting disease, neuromuscular disorder, spinal cord
CC   injury, traumatic injury, congestive obstructive pulmonary disease
CC   (COPD), AIDS or cachexia.
XX
SQ   Sequence   226 AA;

  Query Match             100.0%;  Score 118;  DB 22;  Length 226;
  Best Local Similarity   100.0%;  Pred. No. 7.4e-11;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db     166 FVFLQKYPHTHLVHQANPRGS 186


RESULT 20
AAB20152
ID   AAB20152 standard; Protein; 254 AA.
XX
AC   AAB20152;
XX
DT   30-APR-2001  (first entry)
XX
DE   Growth differentiation factor 8 AutoVac construct GDF-8 dimer.
XX
KW   Growth differentiation factor 8; GDF-8; myostatin; tetanus toxin;
KW   T-cell epitope; down-regulation; vaccine; muscle; meat; cachexia;
KW   cardiant; human; mutant; mutein.
XX
OS   Chimeric - Homo sapiens.
OS   Chimeric - Clostridium tetani.
OS   Synthetic.
XX
FH   Key             Location/Qualifiers
FT   Region          1..109
FT                   /note= "109 C-terminal residues of human GDF-8"
FT   Region          110..124
FT                   /note= "tetanus toxoid P2 epitope"
FT   Region          125..145
FT                   /note= "tetanus toxoid P30 epitope"
FT   Region          146..254
FT                   /note= "109 C-terminal residues of human GDF-8"
FT   Misc-difference 90..91
FT                   /note= "optionally replaced by Glu-Gly"
FT   Misc-difference 235..236
FT                   /note= "optionally replaced by Glu-Gly"
XX
PN   WO200105820-A2.
XX
PD   25-JAN-2001.
XX
PF   20-JUL-2000; 2000WO-DK00413.
XX
PR   20-JUL-1999;   99DK-0001014.
PR   26-JUL-1999;   99US-0145275.
XX
PA   (MEBI-) M & E BIOTECH AS.
XX
PI   Halkier T,  Mouritsen S,  Klysner S;
XX
DR   WPI; 2001-112680/12.
XX
PT   Increasing the muscle mass of animals used in meat production by down
PT   regulating growth differentiation factor 8 (GDF-8) activity in the
PT   animal through induction of anti-GDF-8 antibody production  -
XX
PS   Example 1; Page 105-106; 110pp; English.
XX
CC   The present sequence is that of AutoVac construct GDF-8 dimer
CC   comprising 2 copies of the 109-amino acid C-terminal region of human
CC   growth differentiation factor 8 (GDF-8, see AAF20141) covalently
CC   connected through the P2 and P30 T-cell epitopes (see AAB20143-44)
CC   of tetanus toxin.  It is an object of the invention to produce a
CC   recombinant therapeutic vaccine that is capable of effecting
CC   down-regulation of GDF-8 in order to increase the muscle growth
CC   rate of farm animals.  The vaccines (see AAB20145-53) are capable
CC   of breaking autotolerance against autologous GDF-8.  They comprise
CC   the C-terminal portion of human GDF-8 in which a portion of the
CC   native sequence is replaced by a T-cell epitope such as P30, with
CC   minimal disturbance of the authentic 3-dimensional structure of
CC   the protein.  Nucleic acids encoding the GDF-8 variants can be used
CC   for genetic immunisation of the animals.  Down-regulation of GDF-8
CC   activity can increase muscle mass by up to at least 45% in cattle,
CC   pigs and poultry used for meat production, reducing the need for
CC   antibiotic feed-additives.  Anti-GDF8 vaccines can be used to
CC   treat human diseases such as cancer cachexia where muscle atrophy is
CC   pronounced and for patients suffering from acute and chronic heart
CC   failure.
XX
SQ   Sequence   254 AA;

  Query Match             100.0%;  Score 118;  DB 22;  Length 254;
  Best Local Similarity   100.0%;  Pred. No. 8.5e-11;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db     194 FVFLQKYPHTHLVHQANPRGS 214


RESULT 21
AAB20132
ID   AAB20132 standard; Protein; 362 AA.
XX
AC   AAB20132;
XX
```

DT 30-APR-2001 (first entry)
XX
DE Turkey growth differentiation factor 8.
XX
KW Growth differentiation factor 8; GDF-8; myostatin; down-regulation;
KW vaccine; muscle; meat; cachexia; cardiant; turkey.
XX
OS Meleagris gallopavo.
XX
PN WO200105820-A2.
XX
PD 25-JAN-2001.
XX
PF 20-JUL-2000; 2000WO-DK00413.
XX
PR 20-JUL-1999; 99DK-0001014.
PR 26-JUL-1999; 99US-0145275.
XX
PA (MEBI-) M & E BIOTECH AS.
XX
PI Halkier T, Mouritsen S, Klysner S;
XX
DR WPI; 2001-112680/12.
XX
PT Increasing the muscle mass of animals used in meat production by down
PT regulating growth differentiation factor 8 (GDF-8) activity in the
PT animal through induction of anti-GDF-8 antibody production -
XX
PS Example 1; Page 76-78; 110pp; English.
XX
CC The present sequence is that of turkey growth differentiation factor
CC 8 (GDF-8), also called myostatin. It is an object of the invention
CC to produce a recombinant therapeutic vaccine capable of effecting
CC down-regulation of GDF-8 in order to increase the muscle growth
CC rate of farm animals. Variants of GDF-8 (see AAB20145-53) are
CC provided that are capable of breaking autotolerance against
CC autologous GDF-8. These comprise a C-terminal portion of human
CC GDF-8 in which a portion of the native sequence is replaced by a
CC T-cell epitope such as the promiscuous tetanus toxin T-cell epitope
CC P2 or P30. Nucleic acids encoding the GDF-8 variants can be used
CC for genetic immunisation of the animals. Down-regulation of GDF-8
CC activity is used to increase muscle mass by up to at least 45%
CC in cattle, pigs and poultry used for meat production, reducing the
CC need for antibiotic feed-additives. Anti-GDF8 vaccines can be used
CC to treat human diseases such as cancer cachexia where muscle atrophy
CC is pronounced and for patients suffering from acute and chronic
CC heart failure.
XX
SQ Sequence 362 AA;

Query Match 100.0%; Score 118; DB 22; Length 362;
Best Local Similarity 100.0%; Pred. No. 1.3e-10;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FVFLQKYPHTHLVHQANPRGS 21
||||||||||||||||||||
Db 302 FVFLQKYPHTHLVHQANPRGS 322

RESULT 22
AAU75623
ID AAU75623 standard; Protein; 374 AA.
XX
AC AAU75623;
XX
DT 21-MAY-2002 (first entry)
XX
DE Chicken promyostatin.
XX
KW Chicken; promyostatin; immunomodulator; antidepressant; anorectic;
KW neuroprotective; antidiabetic; growth differentiation factor receptor;
KW myostatin receptor; GDF; muscle tissue; adipose tissue; cachexia;
KW wasting disorder; anorexia; muscular dystrophy; neuromuscular disease;
KW metabolic disorder; obesity; type II diabetes.
XX
OS Gallus gallus.
XX
PN WO200210214-A2.
XX
PD 07-FEB-2002.
XX
PF 26-JUL-2001; 2001WO-US23615.
XX
PR 27-JUL-2000; 2000US-0626896.
XX
PA (UYJO) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI Lee S, McPherron AC;
XX
DR WPI; 2002-217116/27.
DR N-PSDB; ABK15396.
XX
PT New growth differentiation factor (GDF) receptors and modulators,
PT useful for ameliorating wasting disorders such as cachexia, muscular
PT dystrophy or neuromuscular disease or a metabolic disorder such as
PT obesity or type II diabetes -
XX
PS Claim 22; Fig 1; 184pp; English.
XX
CC The invention relates to a substantially purified growth differentiation
CC factor (GDF) receptor, specifically a myostatin receptor, or its
CC functional peptide portion. Also described is a method of modulating an
CC effect of myostatin on a cell by contacting the cell with an agent that
CC affects myostatin signal transduction in the cell. The method and the
CC receptor are useful for ameliorating the severity of a pathological
CC condition characterised by an abnormal amount, development or metabolic
CC activity of muscle or adipose tissue in a subject, particularly a wasting
CC disorder (e.g. cachexia, anorexia, muscular dystrophy or neuromuscular
CC disease) or a metabolic disorder (e.g. obesity or type II diabetes). The
CC present sequence represents the amino acid sequence of chicken
CC promyostatin.
XX
SQ Sequence 374 AA;

Query Match 100.0%; Score 118; DB 23; Length 374;
Best Local Similarity 100.0%; Pred. No. 1.3e-10;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FVFLQKYPHTHLVHQANPRGS 21
||||||||||||||||||||
Db 314 FVFLQKYPHTHLVHQANPRGS 334

RESULT 23
AAR63160
ID AAR63160 standard; Protein; 375 AA.
XX
AC AAR63160;
XX
DT 23-JUN-1995 (first entry)
XX
DE Human growth differentiation factor-8 protein.
XX
KW Growth differentiation factor-8; GDF-8; cell proliferation;
KW adipocyte; obesity; transforming growth factor-beta.
XX
OS Homo sapiens.
XX
PN WO9421681-A.
XX
PD 29-SEP-1994.
XX
PF 18-MAR-1994; 94WO-US03019.
XX
PR 19-MAR-1993; 93US-0033923.
XX

```
PA   (UYJO ) UNIV JOHNS HOPKINS SCHOOL MED.
XX
PI   Lee S,  Mcpherron AC;
XX
DR   WPI; 1994-316943/39.
DR   Q-PSDB; Q76372.
XX
PT   New growth differentiation factor 8 - useful for treatment and
PT   diagnosis of cell proliferative disorders esp. of muscle.
XX
PS   Claim 3; Page 58; 84pp; English.
XX
CC   GDF-8 can be used to maintain cells before transplantation; to
CC   improve efficiency of cell fusion and to treat obesity or diseases
CC   related to abnormal adipocyte proliferation.
XX
SQ   Sequence   375 AA;

  Query Match             100.0%;  Score 118;  DB 15;  Length 375;
  Best Local Similarity   100.0%;  Pred. No. 1.3e-10;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db     315 FVFLQKYPHTHLVHQANPRGS 335


RESULT 24
AAW69888
ID   AAW69888 standard; Protein; 375 AA.
XX
AC   AAW69888;
XX
DT   07-DEC-1998  (first entry)
XX
DE   Chicken growth differentiation factor-8.
XX
KW   Growth differentiation factor-8; GDF-8; chicken; transgenic animal;
KW   transforming growth factor-beta; muscle; meat; inhibitor; obesity;
KW   neuromuscular disease; muscular dystrophy; cachexia; AIDS; cancer;
KW   therapy.
XX
OS   Gallus sp.
XX
FH   Key             Location/Qualifiers
FT   Cleavage-site   263..266
FT   Protein         267..375
FT                   /label= Mat_protein
XX
PN   WO9833887-A1.
XX
PD   06-AUG-1998.
XX
PF   05-FEB-1998;   98WO-US02479.
XX
PR   23-MAY-1997;   97US-0862445.
PR   05-FEB-1997;   97US-0795071.
PR   28-APR-1997;   97US-0847910.
XX
PA   (UYJO ) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI   Lee S,  McPherron AC;
XX
DR   WPI; 1998-437444/37.
DR   N-PSDB; AAV45819.
XX
PT   Transgenic animals with gene for growth differentiation factor-8
PT   disrupted - have increased muscle and reduced cholesterol contents,
PT   also use of GDF-8 inhibitors for treating cancer, obesity,
PT   neuromuscular disease
XX
PS   Example 9; Fig 14c; 125pp; English.
XX
CC   This is the amino acid sequence of chicken growth differentiation
CC   factor-8 (GDF-8), a novel member of the transforming growth factor-
CC   beta superfamily that appears to relate to various cell
CC   proliferative disorders, especially those involving muscle, nerve
CC   and adipose tissue.  The sequence was deduced from a cDNA clone
CC   (see AAV45819) isolated from a skeletal muscle cDNA library.  The
CC   invention provides novel mammalian and avian GDF-8 proteins (see
CC   AAW69883-92).  A transgenic non-human animal is claimed in which
CC   GDF-8 expression is disrupted or interfered with.  Also claimed
CC   are: (1) chicken or turkey eggs or meat, beef, milk, pork and lamb
CC   from these animals; (2) method for increasing muscle mass in
CC   animals by administering an antibody (Ab) that binds to GDF-8; (3)
CC   inhibiting the action of GDF-8 by treating foetal or adult muscle
CC   or progenitor cells with a GDF-8 inhibitor; (4) isolated nucleic
CC   acid encoding a GDF-8 protein truncated by loss of the C-terminal
CC   active fragment.  The transgenic animals have increased muscle mass
CC   and for poultry reduced cholesterol contents.  Method (3) is used
CC   to treat muscle wasting or neuromuscular diseases, muscular atrophy
CC   and aging, particularly muscular dystrophy, spinal cord or
CC   traumatic injuries, congestive or obstructive lung disease, AIDS
CC   and cachexia.  Method (4) is used to treat cancer of muscle,
CC   connective tissue and bone, or obesity.  Also (not claimed) GDF-8
CC   can be used to maintain myoblasts intended for transplanting or to
CC   improve efficiency of fusion.  Ab can be used to detect and
CC   quantify GDF-8 (particularly in muscle, for diagnosis or monitoring),
CC   also for immunotherapy and in vivo imaging.
XX
SQ   Sequence   375 AA;

  Query Match             100.0%;  Score 118;  DB 19;  Length 375;
  Best Local Similarity   100.0%;  Pred. No. 1.3e-10;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db     315 FVFLQKYPHTHLVHQANPRGS 335


RESULT 25
AAW69891
ID   AAW69891 standard; Protein; 375 AA.
XX
AC   AAW69891;
XX
DT   07-DEC-1998  (first entry)
XX
DE   Pig growth differentiation factor-8.
XX
KW   Growth differentiation factor-8; GDF-8; pig; transgenic animal;
KW   transforming growth factor-beta; muscle; meat; inhibitor; obesity;
KW   neuromuscular disease; muscular dystrophy; cachexia; AIDS; cancer;
KW   therapy.
XX
OS   Sus scrofa.
XX
FH   Key             Location/Qualifiers
FT   Cleavage-site   263..266
FT   Protein         267..375
FT                   /label= Mat_protein
XX
PN   WO9833887-A1.
XX
PD   06-AUG-1998.
XX
PF   05-FEB-1998;   98WO-US02479.
XX
PR   23-MAY-1997;   97US-0862445.
PR   05-FEB-1997;   97US-0795071.
PR   28-APR-1997;   97US-0847910.
XX
PA   (UYJO ) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI   Lee S,  McPherron AC;
```

```
XX
DR   WPI; 1998-437444/37.
DR   N-PSDB; AAV45822.
XX
PT   Transgenic animals with gene for growth differentiation factor-8
PT   disrupted - have increased muscle and reduced cholesterol contents,
PT   also use of GDF-8 inhibitors for treating cancer, obesity,
PT   neuromuscular disease
XX
PS   Example 9; Fig 14f; 125pp; English.
XX
CC   This is the amino acid sequence of porcine growth differentiation
CC   factor-8 (GDF-8), a novel member of the transforming growth factor-
CC   beta superfamily that appears to relate to various cell
CC   proliferative disorders, especially those involving muscle, nerve
CC   and adipose tissue.  The sequence was deduced from a cDNA clone
CC   (see AAV45822) isolated from a skeletal muscle cDNA library.  The
CC   invention provides novel mammalian and avian GDF-8 proteins (see
CC   AAW69883-92).  A transgenic non-human animal is claimed in which
CC   GDF-8 expression is disrupted or interfered with.  Also claimed
CC   are: (1) chicken or turkey eggs or meat, beef, milk, pork and lamb
CC   from these animals; (2) method for increasing muscle mass in
CC   animals by administering an antibody (Ab) that binds to GDF-8; (3)
CC   inhibiting the action of GDF-8 by treating foetal or adult muscle
CC   or progenitor cells with a GDF-8 inhibitor; (4) isolated nucleic
CC   acid encoding a GDF-8 protein truncated by loss of the C-terminal
CC   active fragment.  The transgenic animals have increased muscle mass
CC   and for poultry reduced cholesterol contents.  Method (3) is used
CC   to treat muscle wasting or neuromuscular diseases, muscular atrophy
CC   and aging, particularly muscular dystrophy, spinal cord or
CC   traumatic injuries, congestive or obstructive lung disease, AIDS
CC   and cachexia.  Method (4) is used to treat cancer of muscle,
CC   connective tissue and bone, or obesity.  Also (not claimed) GDF-8
CC   can be used to maintain myoblasts intended for transplanting or to
CC   improve efficiency of fusion.  Ab can be used to detect and
CC   quantify GDF-8 (particularly in muscle, for diagnosis or monitoring),
CC   also for immunotherapy and in vivo imaging.
XX
SQ   Sequence   375 AA;

  Query Match             100.0%;  Score 118;  DB 19;  Length 375;
  Best Local Similarity   100.0%;  Pred. No. 1.3e-10;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db     315 FVFLQKYPHTHLVHQANPRGS 335


RESULT 26
AAW69885
ID   AAW69885 standard; Protein; 375 AA.
XX
AC   AAW69885;
XX
DT   07-DEC-1998  (first entry)
XX
DE   Human growth differentiation factor-8.
XX
KW   Growth differentiation factor-8; GDF-8; human; transgenic animal;
KW   transforming growth factor-beta; muscle; meat; inhibitor; obesity;
KW   neuromuscular disease; muscular dystrophy; cachexia; AIDS; cancer;
KW   therapy.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   Modified-site   71..73
FT                   /note= "Asn is N-glycosylated"
FT   Cleavage-site   263..266
FT   Protein         267..375
FT                   /label= Mat_protein
XX
PN   WO9833887-A1.
XX
PD   06-AUG-1998.
XX
PF   05-FEB-1998;   98WO-US02479.
XX
PR   23-MAY-1997;   97US-0862445.
PR   05-FEB-1997;   97US-0795071.
PR   28-APR-1997;   97US-0847910.
XX
PA   (UYJO ) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI   Lee S,  McPherron AC;
XX
DR   WPI; 1998-437444/37.
DR   N-PSDB; AAV45813.
XX
PT   Transgenic animals with gene for growth differentiation factor-8
PT   disrupted - have increased muscle and reduced cholesterol contents,
PT   also use of GDF-8 inhibitors for treating cancer, obesity,
PT   neuromuscular disease
XX
PS   Example 3; Fig 5c; 125pp; English.
XX
CC   This is the amino acid sequence of human growth differentiation
CC   factor-8 (GDF-8), a novel member of the transforming growth factor-
CC   beta superfamily that appears to relate to various cell
CC   proliferative disorders, especially those involving muscle, nerve
CC   and adipose tissue.  The sequence was deduced from a cDNA clone
CC   (see AAV45810) isolated from a skeletal muscle cDNA library.  The
CC   invention provides novel mammalian and avian GDF-8 proteins (see
CC   AAW69883-92).  A transgenic non-human animal is claimed in which
CC   GDF-8 expression is disrupted or interfered with.  Also claimed
CC   are: (1) chicken or turkey eggs or meat, beef, milk, pork and lamb
CC   from these animals; (2) method for increasing muscle mass in
CC   animals by administering an antibody (Ab) that binds to GDF-8; (3)
CC   inhibiting the action of GDF-8 by treating foetal or adult muscle
CC   or progenitor cells with a GDF-8 inhibitor; (4) isolated nucleic
CC   acid encoding a GDF-8 protein truncated by loss of the C-terminal
CC   active fragment.  The transgenic animals have increased muscle mass
CC   and for poultry reduced cholesterol contents.  Method (3) is used
CC   to treat muscle wasting or neuromuscular diseases, muscular atrophy
CC   and aging, particularly muscular dystrophy, spinal cord or
CC   traumatic injuries, congestive or obstructive lung disease, AIDS
CC   and cachexia.  Method (4) is used to treat cancer of muscle,
CC   connective tissue and bone, or obesity.  Also (not claimed) GDF-8
CC   can be used to maintain myoblasts intended for transplanting or to
CC   improve efficiency of fusion.  Ab can be used to detect and
CC   quantify GDF-8 (particularly in muscle, for diagnosis or monitoring),
CC   also for immunotherapy and in vivo imaging.
XX
SQ   Sequence   375 AA;

  Query Match             100.0%;  Score 118;  DB 19;  Length 375;
  Best Local Similarity   100.0%;  Pred. No. 1.3e-10;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db     315 FVFLQKYPHTHLVHQANPRGS 335


RESULT 27
AAW69886
ID   AAW69886 standard; Protein; 375 AA.
XX
AC   AAW69886;
XX
DT   07-DEC-1998  (first entry)
XX
DE   Baboon growth differentiation factor-8.
XX
KW   Growth differentiation factor-8; GDF-8; baboon; transgenic animal;
```

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KW   transforming growth factor-beta; muscle; meat; inhibitor; obesity;
KW   neuromuscular disease; muscular dystrophy; cachexia; AIDS; cancer;
KW   therapy.
XX
OS   Papio sp.
XX
FH   Key             Location/Qualifiers
FT   Cleavage-site   263..266
FT   Protein         267..375
FT                   /label= Mat_protein
XX
PN   WO9833887-A1.
XX
PD   06-AUG-1998.
XX
PF   05-FEB-1998;    98WO-US02479.
XX
PR   23-MAY-1997;    97US-0862445.
PR   05-FEB-1997;    97US-0795071.
PR   28-APR-1997;    97US-0847910.
XX
PA   (UYJO ) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI   Lee S,  McPherron AC;
XX
DR   WPI; 1998-437444/37.
DR   N-PSDB; AAV45817.
XX
PT   Transgenic animals with gene for growth differentiation factor-8
PT   disrupted - have increased muscle and reduced cholesterol contents,
PT   also use of GDF-8 inhibitors for treating cancer, obesity,
PT   neuromuscular disease
XX
PS   Example 9; Fig 14a; 125pp; English.
XX
CC   This is the amino acid sequence of baboon growth differentiation
CC   factor-8 (GDF-8), a novel member of the transforming growth factor-
CC   beta superfamily that appears to relate to various cell
CC   proliferative disorders, especially those involving muscle, nerve
CC   and adipose tissue.  The sequence was deduced from a cDNA clone
CC   (see AAV45817) isolated from a skeletal muscle cDNA library.  The
CC   invention provides novel mammalian and avian GDF-8 proteins (see
CC   AAW69883-92).  A transgenic non-human animal is claimed in which
CC   GDF-8 expression is disrupted or interfered with.  Also claimed
CC   are: (1) chicken or turkey eggs or meat, beef, milk, pork and lamb
CC   from these animals; (2) method for increasing muscle mass in
CC   animals by administering an antibody (Ab) that binds to GDF-8; (3)
CC   inhibiting the action of GDF-8 by treating foetal or adult muscle
CC   or progenitor cells with a GDF-8 inhibitor; (4) isolated nucleic
CC   acid encoding a GDF-8 protein truncated by loss of the C-terminal
CC   active fragment.  The transgenic animals have increased muscle mass
CC   and for poultry reduced cholesterol contents.  Method (3) is used
CC   to treat muscle wasting or neuromuscular diseases, muscular atrophy
CC   and aging, particularly muscular dystrophy, spinal cord or
CC   traumatic injuries, congestive or obstructive lung disease, AIDS
CC   and cachexia.  Method (4) is used to treat cancer of muscle,
CC   connective tissue and bone, or obesity.  Also (not claimed) GDF-8
CC   can be used to maintain myoblasts intended for transplanting or to
CC   improve efficiency of fusion.  Ab can be used to detect and
CC   quantify GDF-8 (particularly in muscle, for diagnosis or monitoring),
CC   also for immunotherapy and in vivo imaging.
XX
SQ   Sequence   375 AA;

  Query Match             100.0%;  Score 118;  DB 19;  Length 375;
  Best Local Similarity   100.0%;  Pred. No. 1.3e-10;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db     315 FVFLQKYPHTHLVHQANPRGS 335
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```
RESULT 28
AAW69887
ID   AAW69887 standard; Protein; 375 AA.
XX
AC   AAW69887;
XX
DT   07-DEC-1998  (first entry)
XX
DE   Bovine growth differentiation factor-8.
XX
KW   Growth differentiation factor-8; GDF-8; human; transgenic animal;
KW   transforming growth factor-beta; muscle; meat; inhibitor; obesity;
KW   neuromuscular disease; muscular dystrophy; cachexia; AIDS; cancer;
KW   therapy.
XX
OS   Bos taurus.
XX
FH   Key             Location/Qualifiers
FT   Cleavage-site   263..266
FT   Protein         267..375
FT                   /label= Mat_protein
XX
PN   WO9833887-A1.
XX
PD   06-AUG-1998.
XX
PF   05-FEB-1998;    98WO-US02479.
XX
PR   23-MAY-1997;    97US-0862445.
PR   05-FEB-1997;    97US-0795071.
PR   28-APR-1997;    97US-0847910.
XX
PA   (UYJO ) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI   Lee S,  McPherron AC;
XX
DR   WPI; 1998-437444/37.
DR   N-PSDB; AAV45818.
XX
PT   Transgenic animals with gene for growth differentiation factor-8
PT   disrupted - have increased muscle and reduced cholesterol contents,
PT   also use of GDF-8 inhibitors for treating cancer, obesity,
PT   neuromuscular disease
XX
PS   Example 9; Fig 14b; 125pp; English.
XX
CC   This is the amino acid sequence of bovine growth differentiation
CC   factor-8 (GDF-8), a novel member of the transforming growth factor-
CC   beta superfamily that appears to relate to various cell
CC   proliferative disorders, especially those involving muscle, nerve
CC   and adipose tissue.  The sequence was deduced from a cDNA clone
CC   (see AAV45818) isolated from a skeletal muscle cDNA library.  The
CC   invention provides novel mammalian and avian GDF-8 proteins (see
CC   AAW69883-92).  A transgenic non-human animal is claimed in which
CC   GDF-8 expression is disrupted or interfered with.  Also claimed
CC   are: (1) chicken or turkey eggs or meat, beef, milk, pork and lamb
CC   from these animals; (2) method for increasing muscle mass in
CC   animals by administering an antibody (Ab) that binds to GDF-8; (3)
CC   inhibiting the action of GDF-8 by treating foetal or adult muscle
CC   or progenitor cells with a GDF-8 inhibitor; (4) isolated nucleic
CC   acid encoding a GDF-8 protein truncated by loss of the C-terminal
CC   active fragment.  The transgenic animals have increased muscle mass
CC   and for poultry reduced cholesterol contents.  Method (3) is used
CC   to treat muscle wasting or neuromuscular diseases, muscular atrophy
CC   and aging, particularly muscular dystrophy, spinal cord or
CC   traumatic injuries, congestive or obstructive lung disease, AIDS
CC   and cachexia.  Method (4) is used to treat cancer of muscle,
CC   connective tissue and bone, or obesity.  Also (not claimed) GDF-8
CC   can be used to maintain myoblasts intended for transplanting or to
CC   improve efficiency of fusion.  Ab can be used to detect and
CC   quantify GDF-8 (particularly in muscle, for diagnosis or monitoring),
CC   also for immunotherapy and in vivo imaging.
XX
```

```
SQ   Sequence   375 AA;

  Query Match             100.0%;  Score 118;  DB 19;  Length 375;
  Best Local Similarity   100.0%;  Pred. No. 1.3e-10;
  Matches   21;  Conservative   0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db     315 FVFLQKYPHTHLVHQANPRGS 335


RESULT 29
AAW65460
ID   AAW65460 standard; Protein; 375 AA.
XX
AC   AAW65460;
XX
DT   09-NOV-1998  (first entry)
XX
DE   Human growth differentiation factor-8.
XX
KW   Growth differentiation factor-8; GDF-8; human.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   Modified-site   71
FT                   /note= "N-glycosylated"
FT   Cleavage-site   263..266
FT                   /note= "RXXR proteolytic cleavage site"
XX
PN   WO9835019-A1.
XX
PD   13-AUG-1998.
XX
PF   06-FEB-1998;   98WO-US02310.
XX
PR   06-FEB-1997;   97US-0795671.
XX
PA   (UYJO ) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI   Lee S,  McPherron AC;
XX
DR   WPI; 1998-447217/38.
XX
PT   Transgenic animal growth differentiation factor-11 is inhibited - by
PT   insertion of transgene, also use of GDF-11 inhibitors for treating
PT   muscular wasting, neuromuscular disease, obesity
XX
PS   Example 3; Page 55-56; 89pp; English.
XX
CC   This is the amino acid sequence of human growth differentiation
CC   factor-8 (GDF-8).  It shows a high degree of sequence homology
CC   to the newly identified human growth differentiation factor-11
CC   (GDF-11, see AAW65458).  Alignment of the GDF-8 and GDF-11 sequences
CC   reveals potential N-linked glycosylation signals and putative
CC   proteolytic processing sites at analogous positions.  The 2
CC   sequences are related not only in the C-terminal region following
CC   the putative cleavage site (90% amino acid sequence identity) but
CC   also in the pro-region of the molecules (45% amino acid sequence
CC   identity.  Claimed transgenic animals in which GDF-11 production is
CC   reduced produce higher than normal levels of muscle and are useful
CC   in the food industry.  GDF-11 polypeptides, polynucleotides and
CC   antibodies can be used to modulate GDF-11 activity or gene
CC   expression for treatment of cell proliferative disorders involving
CC   muscle, nerve and adipose tissue.
XX
SQ   Sequence   375 AA;

  Query Match             100.0%;  Score 118;  DB 19;  Length 375;
  Best Local Similarity   100.0%;  Pred. No. 1.3e-10;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db     315 FVFLQKYPHTHLVHQANPRGS 335


RESULT 30
AAY33838
ID   AAY33838 standard; Protein; 375 AA.
XX
AC   AAY33838;
XX
DT   08-DEC-1999  (first entry)
XX
DE   Amino acid sequence of human Growth Differentiation Factor-8.
XX
KW   growth differentiation factor; tissue growth; muscle growth;
KW   cell differentiation; animal feed; muscle disorder;
KW   bone degeneration; nerve degeneration; GDF-8; development;
KW   transforming growth factor beta; TGF-beta.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   Modified-site   268..276
FT                   /label= N-glycosylation_site
FT   Cleavage-site   844..855
FT                   /label= Potential_proteolytic_cleavage_site
XX
PN   WO9940181-A1.
XX
PD   12-AUG-1999.
XX
PF   05-FEB-1999;   99WO-US02511.
XX
PR   28-JUL-1998;   98US-0124180.
PR   05-FEB-1998;   98US-0019070.
XX
PA   (UYJO ) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI   Lee S,  McPherron AC;
XX
DR   WPI; 1999-494289/41.
DR   N-PSDB; AAZ06449.
XX
PT   New differentiation factor useful for treating neurodegenerative
PT   diseases
XX
PS   Example 3; Fig 5c; 138pp; English.
XX
CC   This is the amino acid sequence of the Growth Differentiation Factor-8
CC   (GDF-8) which is encoded by the nucleotide sequence AAZ06449.
CC   The 2743 base pair sequence contains a single long open reading frame
CC   beginning with a methionine codon at nucleotide 59 and extending to a
CC   TGA stop codon at nucleotide 1184. The predicted pre-pro-GDF-8
CC   protein is 375 amino acids in length. The sequence contains a core of
CC   hydrophobic amino acids at the N-terminus suggestive of a signal peptide
CC   for secretion, one potential N-glycosylation site at 268 to 276, and
CC   a putative RXXR proteolytic cleavage site at amino acids 844-855.
CC   GDF-8 has been shown to result in increased bone and muscle mass (such
CC   as ribs) when expressed in reduced amounts. GDF-8 minus transgenic
CC   animals and forms of animal feed that can inhibit/reduce production of
CC   GDF-8 are of commercial interest.
CC   GDF-8 expression may also have a role in the therapy of abnormal growth
CC   of muscle, bone or adipose tissue. A GDF-8 monoclonal antibody, GDF-8
CC   antisense molecule or dominant negative polypeptide could be used with
CC   foetal or adult muscle cells, bone cells or progenitor cells. These
CC   agents can be administered to a patient suffering from a disorder such
CC   as muscle wasting disease, neuro muscular disorder, muscle atrophy,
CC   osteoporosis, bone degenerative diseases, obesity or other adipocyte
CC   cell disorders, and aging for example.
XX
SQ   Sequence   375 AA;
```

```
  Query Match             100.0%;  Score 118;  DB 20;  Length 375;
  Best Local Similarity   100.0%;  Pred. No. 1.3e-10;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db     315 FVFLQKYPHTHLVHQANPRGS 335


RESULT 31
AAY33839
ID   AAY33839 standard; Protein; 375 AA.
XX
AC   AAY33839;
XX
DT   08-DEC-1999  (first entry)
XX
DE   Amino acid sequence of Baboon Growth Differentiation Factor-8.
XX
KW   growth differentiation factor; tissue growth; muscle growth;
KW   cell differentiation; animal feed; muscle disorder;
KW   bone degeneration; nerve degeneration; GDF-8; development;
KW   transforming growth factor beta; TGF-beta.
XX
OS   Papio anubis.
XX
PN   WO9940181-A1.
XX
PD   12-AUG-1999.
XX
PF   05-FEB-1999;   99WO-US02511.
XX
PR   28-JUL-1998;   98US-0124180.
PR   05-FEB-1998;   98US-0019070.
XX
PA   (UYJO ) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI   Lee S,  McPherron AC;
XX
DR   WPI; 1999-494289/41.
DR   N-PSDB; AAZ06453.
XX
PT   New differentiation factor useful for treating neurodegenerative
PT   diseases
XX
PS   Example 9; Fig 14a; 138pp; English.
XX
CC   This is the amino acid sequence of the Baboon Growth
CC   Differentiation Factor-8 (GDF-8). Skeletal muscle cDNA libraries from
CC   this species were screened with the murine GDF-8 probe, in order to
CC   isolate the GDF-8. The absolute conservation of the C-terminal region
CC   between species as evolutionarily far apart as humans and chickens,
CC   baboons and turkeys, suggests that this region will be highly conserved
CC   in many other species as well.
CC   GDF-8 has been shown to result in increased bone and muscle mass (such
CC   as ribs) when expressed in reduced amounts. GDF-8 minus transgenic
CC   animals and forms of animal feed that can inhibit/reduce production of
CC   GDF-8 are of commercial interest.
CC   GDF-8 expression may also have a role in the therapy of abnormal growth
CC   of muscle, bone or adipose tissue. A GDF-8 monoclonal antibody, GDF-8
CC   antisense molecule or dominant negative polypeptide could be used with
CC   foetal or adult muscle cells, bone cells or progenitor cells. These
CC   agents can be administered to a patient suffering from a disorder such
CC   as muscle wasting disease, neuro muscular disorder, muscle atrophy,
CC   osteoporosis, bone degenerative diseases, obesity or other adipocyte
CC   cell disorders, and aging for example.
XX
SQ   Sequence   375 AA;

  Query Match             100.0%;  Score 118;  DB 20;  Length 375;
  Best Local Similarity   100.0%;  Pred. No. 1.3e-10;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db     315 FVFLQKYPHTHLVHQANPRGS 335


RESULT 32
AAY33840
ID   AAY33840 standard; Protein; 375 AA.
XX
AC   AAY33840;
XX
DT   08-DEC-1999  (first entry)
XX
DE   Amino acid sequence of Bovine Growth Differentiation Factor-8.
XX
KW   growth differentiation factor; tissue growth; muscle growth;
KW   cell differentiation; animal feed; muscle disorder;
KW   bone degeneration; nerve degeneration; GDF-8; development;
KW   transforming growth factor beta; TGF-beta.
XX
OS   Bovine sp.
XX
PN   WO9940181-A1.
XX
PD   12-AUG-1999.
XX
PF   05-FEB-1999;   99WO-US02511.
XX
PR   28-JUL-1998;   98US-0124180.
PR   05-FEB-1998;   98US-0019070.
XX
PA   (UYJO ) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI   Lee S,  McPherron AC;
XX
DR   WPI; 1999-494289/41.
DR   N-PSDB; AAZ06454.
XX
PT   New differentiation factor useful for treating neurodegenerative
PT   diseases
XX
PS   Example 9; Fig 14b; 138pp; English.
XX
CC   This is the amino acid sequence of the Bovine Growth
CC   Differentiation Factor-8 (GDF-8). Skeletal muscle cDNA libraries from
CC   this species were screened with the murine GDF-8 probe, in order to
CC   isolate the GDF-8. The absolute conservation of the C-terminal region
CC   between species as evolutionary far apart as humans and chickens,
CC   baboons and turkeys, suggests that this region will be highly conserved
CC   in many other species as well.
CC   GDF-8 has been shown to result in increased bone and muscle mass (such
CC   as ribs) when expressed in reduced amounts. GDF-8 minus transgenic
CC   animals and forms of animal feed that can inhibit/reduce production of
CC   GDF-8 are of commercial interest.
CC   GDF-8 expression may also have a role in the therapy of abnormal growth
CC   of muscle, bone or adipose tissue. A GDF-8 monoclonal antibody, GDF-8
CC   antisense molecule or dominant negative polypeptide could be used with
CC   foetal or adult muscle cells, bone cells or progenitor cells. These
CC   agents can be administered to a patient suffering from a disorder such
CC   as muscle wasting disease, neuro muscular disorder, muscle atrophy,
CC   osteoporosis, bone degenerative diseases, obesity or other adipocyte
CC   cell disorders, and aging for example.
XX
SQ   Sequence   375 AA;

  Query Match             100.0%;  Score 118;  DB 20;  Length 375;
  Best Local Similarity   100.0%;  Pred. No. 1.3e-10;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db     315 FVFLQKYPHTHLVHQANPRGS 335
```

```
RESULT 33
AAY33841
ID   AAY33841 standard; Protein; 375 AA.
XX
AC   AAY33841;
XX
DT   08-DEC-1999  (first entry)
XX
DE   Amino acid sequence of Chicken Growth Differentiation Factor-8.
XX
KW   growth differentiation factor; tissue growth; muscle growth;
KW   cell differentiation; animal feed; muscle disorder;
KW   bone degeneration; nerve degeneration; GDF-8; development;
KW   transforming growth factor beta; TGF-beta.
XX
OS   Gallus domesticus.
XX
PN   WO9940181-A1.
XX
PD   12-AUG-1999.
XX
PF   05-FEB-1999;   99WO-US02511.
XX
PR   28-JUL-1998;   98US-0124180.
PR   05-FEB-1998;   98US-0019070.
XX
PA   (UYJO ) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI   Lee S,  McPherron AC;
XX
DR   WPI; 1999-494289/41.
DR   N-PSDB; AAZ06455.
XX
PT   New differentiation factor useful for treating neurodegenerative
PT   diseases
XX
PS   Example 9; Fig 14c; 138pp; English.
XX
CC   This is the amino acid sequence of the Chicken Growth
CC   Differentiation Factor-8 (GDF-8). Skeletal muscle cDNA libraries from
CC   this species were screened with the murine GDF-8 probe, in order to
CC   isolate the GDF-8. The absolute conservation of the C-terminal region
CC   between species as evolutionary far apart as humans and chickens,
CC   baboons and turkeys, suggests that this region will be highly conserved
CC   in many other species as well.
CC   GDF-8 has been shown to result in increased bone and muscle mass (such
CC   as ribs) when expressed in reduced amounts. GDF-8 minus transgenic
CC   animals and forms of animal feed that can inhibit/reduce production of
CC   GDF-8 are of commercial interest.
CC   GDF-8 expression may also have a role in the therapy of abnormal growth
CC   of muscle, bone or adipose tissue. A GDF-8 monoclonal antibody, GDF-8
CC   antisense molecule or dominant negative polypeptide could be used with
CC   foetal or adult muscle cells, bone cells or progenitor cells. These
CC   agents can be administered to a patient suffering from a disorder such
CC   as muscle wasting disease, neuro muscular disorder, muscle atrophy,
CC   osteoporosis, bone degenerative diseases, obesity or other adipocyte
CC   cell disorders, and aging for example.
XX
SQ   Sequence   375 AA;

  Query Match             100.0%;  Score 118;  DB 20;  Length 375;
  Best Local Similarity   100.0%;  Pred. No. 1.3e-10;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db     315 FVFLQKYPHTHLVHQANPRGS 335


RESULT 34
AAY33843
ID   AAY33843 standard; Protein; 375 AA.
XX
AC   AAY33843;
XX
DT   08-DEC-1999  (first entry)
XX
DE   Amino acid sequence of Turkey Growth Differentiation Factor-8.
XX
KW   growth differentiation factor; tissue growth; muscle growth;
KW   cell differentiation; animal feed; muscle disorder;
KW   bone degeneration; nerve degeneration; GDF-8; development;
KW   transforming growth factor beta; TGF-beta.
XX
OS   Meleagris gallopavo.
XX
PN   WO9940181-A1.
XX
PD   12-AUG-1999.
XX
PF   05-FEB-1999;   99WO-US02511.
XX
PR   28-JUL-1998;   98US-0124180.
PR   05-FEB-1998;   98US-0019070.
XX
PA   (UYJO ) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI   Lee S,  McPherron AC;
XX
DR   WPI; 1999-494289/41.
DR   N-PSDB; AAZ06457.
XX
PT   New differentiation factor useful for treating neurodegenerative
PT   diseases
XX
PS   Example 9; Fig 14e; 138pp; English.
XX
CC   This is the amino acid sequence of the Turkey Growth
CC   Differentiation Factor-8 (GDF-8). Skeletal muscle cDNA libraries from
CC   this species were screened with the murine GDF-8 probe, in order to
CC   isolate the GDF-8. The absolute conservation of the C-terminal region
CC   between species as evolutionary far apart as humans and chickens,
CC   baboons and turkeys, suggests that this region will be highly conserved
CC   in many other species as well.
CC   GDF-8 has been shown to result in increased bone and muscle mass (such
CC   as ribs) when expressed in reduced amounts. GDF-8 minus transgenic
CC   animals and forms of animal feed that can inhibit/reduce production of
CC   GDF-8 are of commercial interest.
CC   GDF-8 expression may also have a role in the therapy of abnormal growth
CC   of muscle, bone or adipose tissue. A GDF-8 monoclonal antibody, GDF-8
CC   antisense molecule or dominant negative polypeptide could be used with
CC   foetal or adult muscle cells, bone cells or progenitor cells. These
CC   agents can be administered to a patient suffering from a disorder such
CC   as muscle wasting disease, neuro muscular disorder, muscle atrophy,
CC   osteoporosis, bone degenerative diseases, obesity or other adipocyte
CC   cell disorders, and aging for example.
XX
SQ   Sequence   375 AA;

  Query Match             100.0%;  Score 118;  DB 20;  Length 375;
  Best Local Similarity   100.0%;  Pred. No. 1.3e-10;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db     315 FVFLQKYPHTHLVHQANPRGS 335


RESULT 35
AAY33844
ID   AAY33844 standard; Protein; 375 AA.
XX
AC   AAY33844;
XX
DT   08-DEC-1999  (first entry)
```

XX
DE Amino acid sequence of Procine Growth Differentiation Factor-8.
XX
KW growth differentiation factor; tissue growth; muscle growth;
KW cell differentiation; animal feed; muscle disorder;
KW bone degeneration; nerve degeneration; GDF-8; development;
KW transforming growth factor beta; TGF-beta.
XX
OS Sus scrofa.
XX
PN WO9940181-A1.
XX
PD 12-AUG-1999.
XX
PF 05-FEB-1999; 99WO-US02511.
XX
PR 28-JUL-1998; 98US-0124180.
PR 05-FEB-1998; 98US-0019070.
XX
PA (UYJO) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI Lee S, McPherron AC;
XX
DR WPI; 1999-494289/41.
DR N-PSDB; AAZ06458.
XX
PT New differentiation factor useful for treating neurodegenerative
PT diseases
XX
PS Example 9; Fig 14f; 138pp; English.
XX
CC This is the amino acid sequence of the Procine Growth
CC Differentiation Factor-8 (GDF-8). Skeletal muscle cDNA libraries from
CC this species were screened with the murine GDF-8 probe, in order to
CC isolate the GDF-8. The absolute conservation of the C-terminal region
CC between species as evolutionary far apart as humans and chickens,
CC baboons and turkeys, suggests that this region will be highly conserved
CC in many other species as well.
CC GDF-8 has been shown to result in increased bone and muscle mass (such
CC as ribs) when expressed in reduced amounts. GDF-8 minus transgenic
CC animals and forms of animal feed that can inhibit/reduce production of
CC GDF-8 are of commercial interest.
CC GDF-8 expression may also have a role in the therapy of abnormal growth
CC of muscle, bone or adipose tissue. A GDF-8 monoclonal antibody, GDF-8
CC antisense molecule or dominant negative polypeptide could be used with
CC foetal or adult muscle cells, bone cells or progenitor cells. These
CC agents can be administered to a patient suffering from a disorder such
CC as muscle wasting disease, neuro muscular disorder, muscle atrophy,
CC osteoporosis, bone degenerative diseases, obesity or other adipocyte
CC cell disorders, and aging for example.
XX
SQ Sequence 375 AA;

Query Match 100.0%; Score 118; DB 20; Length 375;
Best Local Similarity 100.0%; Pred. No. 1.3e-10;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FVFLQKYPHTHLVHQANPRGS 21
||||||||||||||||||||
Db 315 FVFLQKYPHTHLVHQANPRGS 335

RESULT 36
AAY33937
ID AAY33937 standard; peptide; 375 AA.
XX
AC AAY33937;
XX
DT 09-NOV-1999 (first entry)
XX
DE Amino acid sequence of chicken myostatin.
XX
KW Myostatin; mouse; rabbit; human; baboon; bovine; porcine; ovine; chick;
KW turkey; zebrafish; immune response; vaccine; body weight; muscle mass;
KW mammary gland tissue; lactation; feed uptake; muscle degeneration; GDF11.
XX
OS Gallus sp.
XX
PN WO9942573-A1.
XX
PD 26-AUG-1999.
XX
PF 19-FEB-1999; 99WO-CA00128.
XX
PR 19-FEB-1998; 98US-0075213.
XX
PA (BIOS-) BIOSTAR INC.
XX
PI Barker CA, Morsey M;
XX
DR WPI; 1999-527471/44.
XX
PT New myostatin peptide, multimers and immunoconjugates for eliciting
PT an immune response in a vertebrate against a myostatin immunogen
XX
PS Claim 4; Fig 1A-D; 109pp; English.
XX
CC The invention provides myostatin peptides consisting of 3-100 amino
CC acids, derived from a region of mouse, rabbit, human, baboon, bovine,
CC porcine, ovine, chick, turkey or zebrafish myostatin (see sequences
CC AAY33930-939). The myostatin peptides are derived preferably from a
CC region of amino acid residues 1-275, 25-300, 50-325 or 75-350 of the
CC above sequences. The peptides and the nucleic acids encoding the peptides
CC are useful as vaccines for eliciting an immune response in a vertebrate
CC against a myostatin immunogen. They result in increasing body weight,
CC muscle mass, number and size of muscle cells, muscle strength, mammary
CC gland tissue, lactation, appetite or feed uptake, life span of the
CC vertebrate, and cause a reduction in body fat content, useful for muscle
CC wasting conditions. The vaccines are also useful for treating a disorder
CC which comprises degeneration or wasting of muscle in a vertebrate, and
CC useful for modulating GDF11 activity. The present sequence represents
CC a chicken myostatin seqeunce.
XX
SQ Sequence 375 AA;

Query Match 100.0%; Score 118; DB 20; Length 375;
Best Local Similarity 100.0%; Pred. No. 1.3e-10;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FVFLQKYPHTHLVHQANPRGS 21
||||||||||||||||||||
Db 315 FVFLQKYPHTHLVHQANPRGS 335

RESULT 37
AAY33938
ID AAY33938 standard; peptide; 375 AA.
XX
AC AAY33938;
XX
DT 09-NOV-1999 (first entry)
XX
DE Amino acid sequence of turkey myostatin.
XX
KW Myostatin; mouse; rabbit; human; baboon; bovine; porcine; ovine; chick;
KW turkey; zebrafish; immune response; vaccine; body weight; muscle mass;
KW mammary gland tissue; lactation; feed uptake; muscle degeneration; GDF11.
XX
OS Meleagris gallopavo.
XX
PN WO9942573-A1.
XX
PD 26-AUG-1999.
XX
PF 19-FEB-1999; 99WO-CA00128.
XX

```
PR   19-FEB-1998;   98US-0075213.
XX
PA   (BIOS-) BIOSTAR INC.
XX
PI   Barker CA,  Morsey M;
XX
DR   WPI; 1999-527471/44.
XX
PT   New myostatin peptide, multimers and immunoconjugates for eliciting
PT   an immune response in a vertebrate against a myostatin immunogen
XX
PS   Claim 4; Fig 1A-D; 109pp; English.
XX
CC   The invention provides myostatin peptides consisting of 3-100 amino
CC   acids, derived from a region of mouse, rabbit, human, baboon, bovine,
CC   porcine, ovine, chick, turkey or zebrafish myostatin (see sequences
CC   AAY33930-939). The myostatin peptides are derived preferably from a
CC   region of amino acid residues 1-275, 25-300, 50-325 or 75-350 of the
CC   above sequences. The peptides and the nucleic acids encoding the peptides
CC   are useful as vaccines for eliciting an immune response in a vertebrate
CC   against a myostatin immunogen. They result in increasing body weight,
CC   muscle mass, number and size of muscle cells, muscle strength, mammary
CC   gland tissue, lactation, appetite or feed uptake, life span of the
CC   vertebrate, and cause a reduction in body fat content, useful for muscle
CC   wasting conditions. The vaccines are also useful for treating a disorder
CC   which comprises degeneration or wasting of muscle in a vertebrate, and
CC   useful for modulating GDF11 activity. The present sequence represents
CC   a turkey myostatin seqeunce.
XX
SQ   Sequence   375 AA;

  Query Match             100.0%;  Score 118;  DB 20;  Length 375;
  Best Local Similarity   100.0%;  Pred. No. 1.3e-10;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db     315 FVFLQKYPHTHLVHQANPRGS 335


RESULT 38
AAY33932
ID   AAY33932 standard; peptide; 375 AA.
XX
AC   AAY33932;
XX
DT   09-NOV-1999  (first entry)
XX
DE   Amino acid sequence of human myostatin.
XX
KW   Myostatin; mouse; rabbit; human; baboon; bovine; porcine; ovine; chick;
KW   turkey; zebrafish; immune response; vaccine; body weight; muscle mass;
KW   mammary gland tissue; lactation; feed uptake; muscle degeneration; GDF11.
XX
OS   Homo sapiens.
XX
PN   WO9942573-A1.
XX
PD   26-AUG-1999.
XX
PF   19-FEB-1999;   99WO-CA00128.
XX
PR   19-FEB-1998;   98US-0075213.
XX
PA   (BIOS-) BIOSTAR INC.
XX
PI   Barker CA,  Morsey M;
XX
DR   WPI; 1999-527471/44.
XX
PT   New myostatin peptide, multimers and immunoconjugates for eliciting
PT   an immune response in a vertebrate against a myostatin immunogen
XX
PS   Claim 4; Fig 1A-D; 109pp; English.
XX
CC   The invention provides myostatin peptides consisting of 3-100 amino
CC   acids, derived from a region of mouse, rabbit, human, baboon, bovine,
CC   porcine, ovine, chick, turkey or zebrafish myostatin (see sequences
CC   AAY33930-939). The myostatin peptides are derived preferably from a
CC   region of amino acid residues 1-275, 25-300, 50-325 or 75-350 of the
CC   above sequences. The peptides and the nucleic acids encoding the peptides
CC   are useful as vaccines for eliciting an immune response in a vertebrate
CC   against a myostatin immunogen. They result in increasing body weight,
CC   muscle mass, number and size of muscle cells, muscle strength, mammary
CC   gland tissue, lactation, appetite or feed uptake, life span of the
CC   vertebrate, and cause a reduction in body fat content, useful for muscle
CC   wasting conditions. The vaccines are also useful for treating a disorder
CC   which comprises degeneration or wasting of muscle in a vertebrate, and
CC   useful for modulating GDF11 activity. The present sequence represents
CC   a human myostatin seqeunce.
XX
SQ   Sequence   375 AA;

  Query Match             100.0%;  Score 118;  DB 20;  Length 375;
  Best Local Similarity   100.0%;  Pred. No. 1.3e-10;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db     315 FVFLQKYPHTHLVHQANPRGS 335


RESULT 39
AAY33933
ID   AAY33933 standard; peptide; 375 AA.
XX
AC   AAY33933;
XX
DT   09-NOV-1999  (first entry)
XX
DE   Amino acid sequence of baboon myostatin.
XX
KW   Myostatin; mouse; rabbit; human; baboon; bovine; porcine; ovine; chick;
KW   turkey; zebrafish; immune response; vaccine; body weight; muscle mass;
KW   mammary gland tissue; lactation; feed uptake; muscle degeneration; GDF11.
XX
OS   Papio sp.
XX
PN   WO9942573-A1.
XX
PD   26-AUG-1999.
XX
PF   19-FEB-1999;   99WO-CA00128.
XX
PR   19-FEB-1998;   98US-0075213.
XX
PA   (BIOS-) BIOSTAR INC.
XX
PI   Barker CA,  Morsey M;
XX
DR   WPI; 1999-527471/44.
XX
PT   New myostatin peptide, multimers and immunoconjugates for eliciting
PT   an immune response in a vertebrate against a myostatin immunogen
XX
PS   Claim 4; Fig 1A-D; 109pp; English.
XX
CC   The invention provides myostatin peptides consisting of 3-100 amino
CC   acids, derived from a region of mouse, rabbit, human, baboon, bovine,
CC   porcine, ovine, chick, turkey or zebrafish myostatin (see sequences
CC   AAY33930-939). The myostatin peptides are derived preferably from a
CC   region of amino acid residues 1-275, 25-300, 50-325 or 75-350 of the
CC   above sequences. The peptides and the nucleic acids encoding the peptides
CC   are useful as vaccines for eliciting an immune response in a vertebrate
CC   against a myostatin immunogen. They result in increasing body weight,
CC   muscle mass, number and size of muscle cells, muscle strength, mammary
```

```
CC   gland tissue, lactation, appetite or feed uptake, life span of the
CC   vertebrate, and cause a reduction in body fat content, useful for muscle
CC   wasting conditions. The vaccines are also useful for treating a disorder
CC   which comprises degeneration or wasting of muscle in a vertebrate, and
CC   useful for modulating GDF11 activity. The present sequence represents
CC   a baboon myostatin seqeunce.
XX
SQ   Sequence   375 AA;

  Query Match             100.0%;  Score 118;  DB 20;  Length 375;
  Best Local Similarity   100.0%;  Pred. No. 1.3e-10;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db     315 FVFLQKYPHTHLVHQANPRGS 335


RESULT 40
AAY33934
ID   AAY33934 standard; peptide; 375 AA.
XX
AC   AAY33934;
XX
DT   09-NOV-1999  (first entry)
XX
DE   Amino acid sequence of bovine myostatin.
XX
KW   Myostatin; mouse; rabbit; human; baboon; bovine; porcine; ovine; chick;
KW   turkey; zebrafish; immune response; vaccine; body weight; muscle mass;
KW   mammary gland tissue; lactation; feed uptake; muscle degeneration; GDF11.
XX
OS   Bos sp.
XX
PN   WO9942573-A1.
XX
PD   26-AUG-1999.
XX
PF   19-FEB-1999;   99WO-CA00128.
XX
PR   19-FEB-1998;   98US-0075213.
XX
PA   (BIOS-) BIOSTAR INC.
XX
PI   Barker CA,  Morsey M;
XX
DR   WPI; 1999-527471/44.
XX
PT   New myostatin peptide, multimers and immunoconjugates for eliciting
PT   an immune response in a vertebrate against a myostatin immunogen
XX
PS   Claim 4; Fig 1A-D; 109pp; English.
XX
CC   The invention provides myostatin peptides consisting of 3-100 amino
CC   acids, derived from a region of mouse, rabbit, human, baboon, bovine,
CC   porcine, ovine, chick, turkey or zebrafish myostatin (see sequences
CC   AAY33930-939). The myostatin peptides are derived preferably from a
CC   region of amino acid residues 1-275, 25-300, 50-325 or 75-350 of the
CC   above sequences. The peptides and the nucleic acids encoding the peptides
CC   are useful as vaccines for eliciting an immune response in a vertebrate
CC   against a myostatin immunogen. They result in increasing body weight,
CC   muscle mass, number and size of muscle cells, muscle strength, mammary
CC   gland tissue, lactation, appetite or feed uptake, life span of the
CC   vertebrate, and cause a reduction in body fat content, useful for muscle
CC   wasting conditions. The vaccines are also useful for treating a disorder
CC   which comprises degeneration or wasting of muscle in a vertebrate, and
CC   useful for modulating GDF11 activity. The present sequence represents
CC   a bovine myostatin seqeunce.
XX
SQ   Sequence   375 AA;

  Query Match             100.0%;  Score 118;  DB 20;  Length 375;
  Best Local Similarity   100.0%;  Pred. No. 1.3e-10;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db     315 FVFLQKYPHTHLVHQANPRGS 335


RESULT 41
AAY33935
ID   AAY33935 standard; peptide; 375 AA.
XX
AC   AAY33935;
XX
DT   09-NOV-1999  (first entry)
XX
DE   Amino acid sequence of porcine myostatin.
XX
KW   Myostatin; mouse; rabbit; human; baboon; bovine; porcine; ovine; chick;
KW   turkey; zebrafish; immune response; vaccine; body weight; muscle mass;
KW   mammary gland tissue; lactation; feed uptake; muscle degeneration; GDF11.
XX
OS   Sus sp.
XX
PN   WO9942573-A1.
XX
PD   26-AUG-1999.
XX
PF   19-FEB-1999;   99WO-CA00128.
XX
PR   19-FEB-1998;   98US-0075213.
XX
PA   (BIOS-) BIOSTAR INC.
XX
PI   Barker CA,  Morsey M;
XX
DR   WPI; 1999-527471/44.
XX
PT   New myostatin peptide, multimers and immunoconjugates for eliciting
PT   an immune response in a vertebrate against a myostatin immunogen
XX
PS   Claim 4; Fig 1A-D; 109pp; English.
XX
CC   The invention provides myostatin peptides consisting of 3-100 amino
CC   acids, derived from a region of mouse, rabbit, human, baboon, bovine,
CC   porcine, ovine, chick, turkey or zebrafish myostatin (see sequences
CC   AAY33930-939). The myostatin peptides are derived preferably from a
CC   region of amino acid residues 1-275, 25-300, 50-325 or 75-350 of the
CC   above sequences. The peptides and the nucleic acids encoding the peptides
CC   are useful as vaccines for eliciting an immune response in a vertebrate
CC   against a myostatin immunogen. They result in increasing body weight,
CC   muscle mass, number and size of muscle cells, muscle strength, mammary
CC   gland tissue, lactation, appetite or feed uptake, life span of the
CC   vertebrate, and cause a reduction in body fat content, useful for muscle
CC   wasting conditions. The vaccines are also useful for treating a disorder
CC   which comprises degeneration or wasting of muscle in a vertebrate, and
CC   useful for modulating GDF11 activity. The present sequence represents
CC   a porcine myostatin seqeunce.
XX
SQ   Sequence   375 AA;

  Query Match             100.0%;  Score 118;  DB 20;  Length 375;
  Best Local Similarity   100.0%;  Pred. No. 1.3e-10;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db     315 FVFLQKYPHTHLVHQANPRGS 335


RESULT 42
AAY33917
ID   AAY33917 standard; Protein; 375 AA.
XX
```

```
AC   AAY33917;
XX
DT   09-NOV-1999  (first entry)
XX
DE   Bovine myostatin sequence.
XX
KW   Myostatin; mouse; rabbit; human; baboon; bovine; porcine; ovine; chick;
KW   turkey; zebrafish; immune response; vaccine; body weight; muscle mass;
KW   mammary gland tissue; lactation; feed uptake; muscle degeneration;
KW   GDF11 activity.
XX
OS   Bos sp.
XX
FH   Key             Location/Qualifiers
FT   Cleavage-site   263..266
FT                   /note= "proteolytic cleavage site"
FT   Region          264..375
FT                   /note= "myostatin active region"
XX
PN   WO9942573-A1.
XX
PD   26-AUG-1999.
XX
PF   19-FEB-1999;   99WO-CA00128.
XX
PR   19-FEB-1998;   98US-0075213.
XX
PA   (BIOS-) BIOSTAR INC.
XX
PI   Barker CA,  Morsey M;
XX
DR   WPI; 1999-527471/44.
DR   N-PSDB; AAX99349.
XX
PT   New myostatin peptide, multimers and immunoconjugates for eliciting
PT   an immune response in a vertebrate against a myostatin immunogen
XX
PS   Disclosure; Fig 16B; 109pp; English.
XX
CC   The invention provides myostatin peptides consisting of 3-100 amino
CC   acids, derived from a region of mouse, rabbit, human, baboon, bovine,
CC   porcine, ovine, chick, turkey or zebrafish myostatin (see sequences
CC   AAY33930-939). The myostatin peptides are derived preferably from a
CC   region of amino acid residues 1-275, 25-300, 50-325 or 75-350 of the
CC   above sequences. The peptides and the nucleic acids encoding the peptides
CC   are useful as vaccines for eliciting an immune response in a vertebrate
CC   against a myostatin immunogen. They result in increasing body weight,
CC   muscle mass, number and size of muscle cells, muscle strength, mammary
CC   gland tissue, lactation, appetite or feed uptake, life span of the
CC   vertebrate, and cause a reduction in body fat content, useful for muscle
CC   wasting conditions. The vaccines are also useful for treating a disorder
CC   which comprises degeneration or wasting of muscle in a vertebrate, and
CC   useful for modulating GDF11 activity. The present sequence represents
CC   the amino acid sequence of bovine myostatin.
XX
SQ   Sequence   375 AA;

  Query Match             100.0%;  Score 118;  DB 20;  Length 375;
  Best Local Similarity   100.0%;  Pred. No. 1.3e-10;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db     315 FVFLQKYPHTHLVHQANPRGS 335


RESULT 43
AAY31189
ID   AAY31189 standard; Protein; 375 AA.
XX
AC   AAY31189;
XX
DT   29-OCT-1999  (first entry)
XX
DE   Human GDF-8 protein.
XX
KW   GDF-8; growth differentiation factor receptor; GDF-11; therapy; human;
KW   veterinary; medicine; treatment; muscle tissue disease; wasting disease;
KW   neuromuscular disorder; muscular atrophy; spinal cord injury; aging; fat;
KW   traumatic injury; acquired immune deficiency syndrome; cachexia;
KW   congenital obstructive pulmonary disease; transgenic animal; transgene;
KW   food animal; cholesterol; muscle mass; diagnostic.
XX
OS   Homo sapiens.
XX
PN   WO9906559-A1.
XX
PD   11-FEB-1999.
XX
PF   28-JUL-1998;   98WO-US15598.
XX
PR   01-AUG-1997;   97US-0054461.
XX
PA   (UYJO ) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI   Lee S,  McPherron A;
XX
DR   WPI; 1999-153789/13.
DR   N-PSDB; AAZ09365.
XX
PT   Recombinant cells that express growth-differentiation factor
PT   receptors - and related antibodies, nucleic acids, vector,
PT   transformed cells, peptide fragments and transgenic animals, for
PT   treatment and diagnosis of muscle tissue diseases
XX
PS   Examples; Fig 1C-D; 89pp; English.
XX
CC   This invention describes novel recombinant cell lines that express
CC   growth-differentiation factor-8 (GDF-8) receptor polypeptide or GDF-11
CC   receptor polypeptide. The GDF receptors are used to identify specific
CC   (ant)agonists, potentially useful therapeutically in human or veterinary
CC   medicine. Antibodies derived from the products of the invention are used
CC   to treat muscle tissue diseases (particularly wasting diseases,
CC   neuromuscular disorders, muscular atrophy and aging, e.g. spinal cord and
CC   traumatic injury, congenital obstructive pulmonary diseases, acquired
CC   immune deficiency syndrome and cachexia). Transgenic, non-human animals
CC   that express the products of the invention from a transgene present in
CC   germ and somatic cells, specifically where GDF-8 receptor is expressed,
CC   may be food animals and have decreased fat and cholesterol contents and
CC   increased muscle mass. Peptides derived from the products of the
CC   invention and GDF-receptor binding and blocking agents, are reagents and
CC   diagnostic agents for studying muscle wasting diseases and for
CC   development of therapeutic agents. This sequence represents the human
CC   GDF-8 protein which is used in the method of the invention.
XX
SQ   Sequence   375 AA;

  Query Match             100.0%;  Score 118;  DB 20;  Length 375;
  Best Local Similarity   100.0%;  Pred. No. 1.3e-10;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db     315 FVFLQKYPHTHLVHQANPRGS 335


RESULT 44
AAY31190
ID   AAY31190 standard; Protein; 375 AA.
XX
AC   AAY31190;
XX
DT   29-OCT-1999  (first entry)
XX
DE   Baboon GDF-8 protein.
XX
```

KW GDF-8; growth differentiation factor receptor; GDF-11; therapy; human;
KW veterinary; medicine; treatment; muscle tissue disease; wasting disease;
KW neuromuscular disorder; muscular atrophy; spinal cord injury; aging; fat;
KW traumatic injury; acquired immune deficiency syndrome; cachexia; baboon;
KW congenital obstructive pulmonary disease; transgenic animal; transgene;
KW food animal; cholesterol; muscle mass; diagnostic.
XX
OS Papio sp.
XX
PN WO9906559-A1.
XX
PD 11-FEB-1999.
XX
PF 28-JUL-1998; 98WO-US15598.
XX
PR 01-AUG-1997; 97US-0054461.
XX
PA (UYJO) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI Lee S, McPherron A;
XX
DR WPI; 1999-153789/13.
DR N-PSDB; AAZ09366.
XX
PT Recombinant cells that express growth-differentiation factor
PT receptors - and related antibodies, nucleic acids, vector,
PT transformed cells, peptide fragments and transgenic animals, for
PT treatment and diagnosis of muscle tissue diseases
XX
PS Examples; Fig 2A; 89pp; English.
XX
CC This invention describes novel recombinant cell lines that express
CC growth-differentiation factor-8 (GDF-8) receptor polypeptide or GDF-11
CC receptor polypeptide. The GDF receptors are used to identify specific
CC (ant)agonists, potentially useful therapeutically in human or veterinary
CC medicine. Antibodies derived from the products of the invention are used
CC to treat muscle tissue diseases (particularly wasting diseases,
CC neuromuscular disorders, muscular atrophy and aging, e.g. spinal cord and
CC traumatic injury, congenital obstructive pulmonary diseases, acquired
CC immune deficiency syndrome and cachexia). Transgenic, non-human animals
CC that express the products of the invention from a transgene present in
CC germ and somatic cells, specifically where GDF-8 receptor is expressed,
CC may be food animals and have decreased fat and cholesterol contents and
CC increased muscle mass. Peptides derived from the products of the
CC invention and GDF-receptor binding and blocking agents, are reagents and
CC diagnostic agents for studying muscle wasting diseases and for
CC development of therapeutic agents. This sequence represents the baboon
CC (Papio sp.) GDF-8 protein which is used in the method of the invention.
XX
SQ Sequence 375 AA;

Query Match 100.0%; Score 118; DB 20; Length 375;
Best Local Similarity 100.0%; Pred. No. 1.3e-10;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FVFLQKYPHTHLVHQANPRGS 21
||||||||||||||||||||||
Db 315 FVFLQKYPHTHLVHQANPRGS 335

RESULT 45
AAY31191
ID AAY31191 standard; Protein; 375 AA.
XX
AC AAY31191;
XX
DT 29-OCT-1999 (first entry)
XX
DE Bovine GDF-8 protein.
XX
KW GDF-8; growth differentiation factor receptor; GDF-11; therapy; human;
KW veterinary; medicine; treatment; muscle tissue disease; wasting disease;
KW neuromuscular disorder; muscular atrophy; spinal cord injury; aging; fat;
KW traumatic injury; acquired immune deficiency syndrome; cachexia; bovine;
KW congenital obstructive pulmonary disease; transgenic animal; transgene;
KW food animal; cholesterol; muscle mass; diagnostic.
XX
OS Bos taurus.
XX
PN WO9906559-A1.
XX
PD 11-FEB-1999.
XX
PF 28-JUL-1998; 98WO-US15598.
XX
PR 01-AUG-1997; 97US-0054461.
XX
PA (UYJO) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI Lee S, McPherron A;
XX
DR WPI; 1999-153789/13.
DR N-PSDB; AAZ09367.
XX
PT Recombinant cells that express growth-differentiation factor
PT receptors - and related antibodies, nucleic acids, vector,
PT transformed cells, peptide fragments and transgenic animals, for
PT treatment and diagnosis of muscle tissue diseases
XX
PS Examples; Fig 2b; 89pp; English.
XX
CC This invention describes novel recombinant cell lines that express
CC growth-differentiation factor-8 (GDF-8) receptor polypeptide or GDF-11
CC receptor polypeptide. The GDF receptors are used to identify specific
CC (ant)agonists, potentially useful therapeutically in human or veterinary
CC medicine. Antibodies derived from the products of the invention are used
CC to treat muscle tissue diseases (particularly wasting diseases,
CC neuromuscular disorders, muscular atrophy and aging, e.g. spinal cord and
CC traumatic injury, congenital obstructive pulmonary diseases, acquired
CC immune deficiency syndrome and cachexia). Transgenic, non-human animals
CC that express the products of the invention from a transgene present in
CC germ and somatic cells, specifically where GDF-8 receptor is expressed,
CC may be food animals and have decreased fat and cholesterol contents and
CC increased muscle mass. Peptides derived from the products of the
CC invention and GDF-receptor binding and blocking agents, are reagents and
CC diagnostic agents for studying muscle wasting diseases and for
CC development of therapeutic agents. This sequence represents the bovine
CC GDF-8 protein which is used in the method of the invention.
XX
SQ Sequence 375 AA;

Query Match 100.0%; Score 118; DB 20; Length 375;
Best Local Similarity 100.0%; Pred. No. 1.3e-10;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FVFLQKYPHTHLVHQANPRGS 21
||||||||||||||||||||||
Db 315 FVFLQKYPHTHLVHQANPRGS 335

RESULT 46
AAY31192
ID AAY31192 standard; Protein; 375 AA.
XX
AC AAY31192;
XX
DT 29-OCT-1999 (first entry)
XX
DE Chicken GDF-8 protein.
XX
KW GDF-8; growth differentiation factor receptor; GDF-11; therapy; human;
KW veterinary; medicine; treatment; muscle tissue disease; wasting disease;
KW neuromuscular disorder; muscular atrophy; spinal cord injury; aging; fat;
KW traumatic injury; acquired immune deficiency syndrome; cachexia; chicken;
KW congenital obstructive pulmonary disease; transgenic animal; transgene;
KW food animal; cholesterol; muscle mass; diagnostic.

XX
OS Gallus sp.
XX
PN WO9906559-A1.
XX
PD 11-FEB-1999.
XX
PF 28-JUL-1998; 98WO-US15598.
XX
PR 01-AUG-1997; 97US-0054461.
XX
PA (UYJO) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI Lee S, McPherron A;
XX
DR WPI; 1999-153789/13.
DR N-PSDB; AAZ09368.
XX
PT Recombinant cells that express growth-differentiation factor
PT receptors - and related antibodies, nucleic acids, vector,
PT transformed cells, peptide fragments and transgenic animals, for
PT treatment and diagnosis of muscle tissue diseases
XX
PS Examples; Fig 2c; 89pp; English.
XX
CC This invention describes novel recombinant cell lines that express
CC growth-differentiation factor-8 (GDF-8) receptor polypeptide or GDF-11
CC receptor polypeptide. The GDF receptors are used to identify specific
CC (ant)agonists, potentially useful therapeutically in human or veterinary
CC medicine. Antibodies derived from the products of the invention are used
CC to treat muscle tissue diseases (particularly wasting diseases,
CC neuromuscular disorders, muscular atrophy and aging, e.g. spinal cord and
CC traumatic injury, congenital obstructive pulmonary diseases, acquired
CC immune deficiency syndrome and cachexia). Transgenic, non-human animals
CC that express the products of the invention from a transgene present in
CC germ and somatic cells, specifically where GDF-8 receptor is expressed,
CC may be food animals and have decreased fat and cholesterol contents and
CC increased muscle mass. Peptides derived from the products of the
CC invention and GDF-receptor binding and blocking agents, are reagents and
CC diagnostic agents for studying muscle wasting diseases and for
CC development of therapeutic agents. This sequence represents the chicken
CC GDF-8 protein which is used in the method of the invention.
XX
SQ Sequence 375 AA;

Query Match 100.0%; Score 118; DB 20; Length 375;
Best Local Similarity 100.0%; Pred. No. 1.3e-10;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FVFLQKYPHTHLVHQANPRGS 21
||||||||||||||||||||
Db 315 FVFLQKYPHTHLVHQANPRGS 335

RESULT 47
AAY31194
ID AAY31194 standard; Protein; 375 AA.
XX
AC AAY31194;
XX
DT 29-OCT-1999 (first entry)
XX
DE Turkey GDF-8 protein.
XX
KW GDF-8; growth differentiation factor receptor; GDF-11; therapy; human;
KW veterinary; medicine; treatment; muscle tissue disease; wasting disease;
KW neuromuscular disorder; muscular atrophy; spinal cord injury; aging; fat;
KW traumatic injury; acquired immune deficiency syndrome; cachexia; turkey;
KW congenital obstructive pulmonary disease; transgenic animal; transgene;
KW food animal; cholesterol; muscle mass; diagnostic.
XX
OS Meleagris gallopavo.
XX
PN WO9906559-A1.
XX
PD 11-FEB-1999.
XX
PF 28-JUL-1998; 98WO-US15598.
XX
PR 01-AUG-1997; 97US-0054461.
XX
PA (UYJO) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI Lee S, McPherron A;
XX
DR WPI; 1999-153789/13.
DR N-PSDB; AAZ09370.
XX
PT Recombinant cells that express growth-differentiation factor
PT receptors - and related antibodies, nucleic acids, vector,
PT transformed cells, peptide fragments and transgenic animals, for
PT treatment and diagnosis of muscle tissue diseases
XX
PS Examples; Fig 2E; 89pp; English.
XX
CC This invention describes novel recombinant cell lines that express
CC growth-differentiation factor-8 (GDF-8) receptor polypeptide or GDF-11
CC receptor polypeptide. The GDF receptors are used to identify specific
CC (ant)agonists, potentially useful therapeutically in human or veterinary
CC medicine. Antibodies derived from the products of the invention are used
CC to treat muscle tissue diseases (particularly wasting diseases,
CC neuromuscular disorders, muscular atrophy and aging, e.g. spinal cord and
CC traumatic injury, congenital obstructive pulmonary diseases, acquired
CC immune deficiency syndrome and cachexia). Transgenic, non-human animals
CC that express the products of the invention from a transgene present in
CC germ and somatic cells, specifically where GDF-8 receptor is expressed,
CC may be food animals and have decreased fat and cholesterol contents and
CC increased muscle mass. Peptides derived from the products of the
CC invention and GDF-receptor binding and blocking agents, are reagents and
CC diagnostic agents for studying muscle wasting diseases and for
CC development of therapeutic agents. This sequence represents the turkey
CC GDF-8 protein which is used in the method of the invention.
XX
SQ Sequence 375 AA;

Query Match 100.0%; Score 118; DB 20; Length 375;
Best Local Similarity 100.0%; Pred. No. 1.3e-10;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FVFLQKYPHTHLVHQANPRGS 21
||||||||||||||||||||
Db 315 FVFLQKYPHTHLVHQANPRGS 335

RESULT 48
AAW97887
ID AAW97887 standard; Protein; 375 AA.
XX
AC AAW97887;
XX
DT 07-JUN-1999 (first entry)
XX
DE Human myostatin.
XX
KW Myostatin; human; transforming growth factor beta;
KW double muscling; muscle hyperplasia; transgenic animal.
XX
OS Homo sapiens.
XX
PN WO9902667-A1.
XX
PD 21-JAN-1999.
XX
PF 14-JUL-1998; 98WO-IB01197.
XX
PR 15-JAN-1998; 98US-0007761.

```
PR   14-JUL-1997;   97US-0891789.
XX
PA   (UYLI-) UNIV LIEGE.
XX
PI   Georges M,  Grobet L,  Poncelet D;
XX
DR   WPI; 1999-120869/10.
XX
PT   Increasing muscle mass in mammals  - by decreasing myostatin
PT   expression
XX
PS   Disclosure; Page 65; 75pp; English.
XX
CC   This is the amino acid sequence of human myostatin, a member of
CC   the transforming growth factor-beta superfamily.  The invention
CC   relates to factors affecting muscle development in mammals,
CC   especially to cloning of the myostatin gene and determining
CC   the role of the gene in muscle hyperplasia.  A mutation of the
CC   bovine myostatin gene (see AAX24415-16) has been detected.  Certain
CC   breeds of cattle homozygous for the mutant gene are double-muscled.
CC   A new method of increasing muscle mass of a mammal having myostatin-
CC   expressing muscle cells, comprises administration of a nucleic acid
CC   molecule substantially complementary to at least a portion of mRNA
CC   encoding myostatin and of sufficient length to reduce myostatin
CC   expression and thus increase muscle mass.  A ribozyme may also be
CC   used.  Also claimed are: a method for determining muscular
CC   hyperplasia (MH) in a mammal using primers based upstream and
CC   downstream of the mutation; a diagnostic kit for determining the
CC   genotype of a sample of genetic material; a method for determining
CC   MH in a mammal; a method for determining double muscling in a
CC   bovine; a method for determining the myostatin genotype of an
CC   animal; purified myostatin; isolated nucleic acids; a microbial
CC   host cell; a probe based on the myostatin gene mutation; transgenic
CC   mammals having MH phenotype; and a myostatin knockout animal.
CC   Primers are preferably based on genomic bovine myostatin DNA (see
CC   AAX24464) and human myostatin cDNA (see AAX24418).
XX
SQ   Sequence   375 AA;

  Query Match             100.0%;  Score 118;  DB 20;  Length 375;
  Best Local Similarity   100.0%;  Pred. No. 1.3e-10;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db     315 FVFLQKYPHTHLVHQANPRGS 335


RESULT 49
AAB21087
ID   AAB21087 standard; Protein; 375 AA.
XX
AC   AAB21087;
XX
DT   19-DEC-2000  (first entry)
XX
DE   Human GDF-8.
XX
KW   GDF-8; growth differentiation factor-8; myostatin; human;
KW   activity inhibitor; muscle-associated disorder; cancer;
KW   muscular dystrophy; spinal cord injury; traumatic injury;
KW   congestive obstructive pulmonary disease; AIDS; cachexia;
KW   adipocyte proliferative disorder; obesity; glucose transport modulation;
KW   diabetes.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   Misc-difference 300..375
FT                   /note= "The nucleotides encoding these residues are
FT                   absent in the human GDF-8 sequence (AAA90292)"
XX
PN   WO200043781-A2.
XX
PD   27-JUL-2000.
XX
PF   21-JAN-2000; 2000WO-US01552.
XX
PR   21-JAN-1999;   99US-0116639.
PR   10-JUN-1999;   99US-0138363.
XX
PA   (META-) METAMORPHIX INC.
XX
PI   Topouzis S,  Wright JF,  Ratovitski T,  Liang L,  Brady JL,  Sinha D;
PI   Yaswen-Corkery L;
XX
DR   WPI; 2000-505849/45.
DR   N-PSDB; AAA90292.
XX
PT   Novel method for identifying inhibitors of growth differentiation
PT   factor (GDF) proteins which used to treat a variety of diseases  -
XX
PS   Disclosure; Fig 17; 122pp; English.
XX
CC   The invention relates to inhibitors of GDFs (growth differentiation
CC   factors), and methods of identifying such inhibitors. The GDF inhibitors
CC   of the invention encompass GDF-specific ribozymes (AAA90265-A90268 and
CC   AAA90294-A90297), GDF-8 antisense oligonucleotides (AAA90269-A90288), and
CC   GDF protein fragments or variants (AAB21078, AAB21082-B21083 and
CC   AAB21085-B21086). The methods are used to identify inhibitors of GDF
CC   proteins, especially GDF-8 (also known as myostatin) and GDF-11. The
CC   inhibitors can be used to modulate GDF-8 or GDF-11 activity or
CC   expression. They can be used to treat diseases or disorders characterised
CC   by aberrant expression of GDF-8 or GDF-11, such as muscle-associated
CC   disorders including cancer, muscular dystrophy, spinal cord injury,
CC   traumatic injury, congestive obstructive pulmonary disease, AIDS and
CC   cachexia, and may also be used to treat obesity and other disorders
CC   related to abnormal proliferation of adipocytes. They may also be used
CC   to treat diabetes via the modulation of glucose transport (e.g., by
CC   increasing the activity of the GLUT4 glucose transporter). The
CC   present sequence represents human GDF-8.
XX
SQ   Sequence   375 AA;

  Query Match             100.0%;  Score 118;  DB 21;  Length 375;
  Best Local Similarity   100.0%;  Pred. No. 1.3e-10;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db     315 FVFLQKYPHTHLVHQANPRGS 335


RESULT 50
AAY92035
ID   AAY92035 standard; Protein; 375 AA.
XX
AC   AAY92035;
XX
DT   19-JUL-2000  (first entry)
XX
DE   Human growth differentiation factor-8 (GDF-8) subunit.
XX
KW   human growth differentiation factor-8; GDF-8; CKGF; mutant;
KW   cystine knot growth factor; hairpin loop; infertility.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   Misc-difference 1..285
FT                   /note= "optionally mutated to increase electrostatic
FT                   interaction between beta hairpin structure and
FT                   a receptor"
FT   Domain          286..305
FT                   /label= beta_hairpin_loop_1
FT                   /note= "mutant optionally comprises one or more
```

```
FT                              substitutions in these residues"
FT   Misc-difference 306..343
FT                   /note= "optionally mutated to increase electrostatic
FT                          interaction between beta hairpin structure and
FT                          a receptor"
FT   Domain          344..368
FT                   /label= beta_hairpin_loop_3
FT                   /note= "mutant optionally comprises one or more
FT                          substitutions in these residues"
FT   Misc-difference 369..375
FT                   /note= "optionally mutated to increase electrostatic
FT                          interaction between beta hairpin structure and
FT                          a receptor"
XX
PN   WO200017360-A1.
XX
PD   30-MAR-2000.
XX
PF   19-MAR-1999;   99WO-US05908.
XX
PR   22-SEP-1998;   98WO-US19772.
XX
PA   (UYMA-) UNIV MARYLAND BALTIMORE.
XX
PI   Weintraub BD,  Szkudlinski MW;
XX
DR   WPI; 2000-283585/24.
XX
PT   New mutant cystine knot growth factor proteins comprising one or more
PT   mutant subunits, useful for treating or preventing diseases e.g.
PT   hypothyroidism and thyroid cancer
XX
PS   Claim 564; Page 313; 320pp; English.
XX
CC   This is the wild type human growth differentiation factor-8 (GDF-8).
CC   Mutants comprise at least one electrostatic charge altering mutation in a
CC   beta hairpin loop, resulting in increased bioactivity.
CC   Mutant cystine knot growth factor (CKGF) proteins comprising one or more
CC   mutant subunits and having novel properties or improved pharmacological
CC   properties, compared to wild type CKGFs, are claimed.  The CKGF
CC   superfamily comprises at least four families of growth factors: the
CC   glycoprotein hormones, the platelet-derived growth factor (PDGF) family,
CC   the neurotrophins and the transforming growth factor-beta family; the
CC   families are known to be structurally similar (especially comprising the
CC   cystine knot topology) and it was shown that mutations at certain
CC   positions in the CKGF hairpin loops of family members and other members
CC   of the CKGF superfamily could significantly alter the biological
CC   activities of the CKGF.
CC   Mutant transforming growth factor family proteins or analogues are useful
CC   for treatment of ovulatory dysfunction, luteal phase defect, unexplained
CC   infertility, time-limited conception and in assisted reproduction.
XX
SQ   Sequence   375 AA;

  Query Match             100.0%;  Score 118;  DB 21;  Length 375;
  Best Local Similarity   100.0%;  Pred. No. 1.3e-10;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db     315 FVFLQKYPHTHLVHQANPRGS 335


RESULT 51
AAY77566
ID   AAY77566 standard; Protein; 375 AA.
XX
AC   AAY77566;
XX
DT   08-MAY-2000  (first entry)
XX
DE   Human growth differentiation factor-8 (GDF-8).
XX
KW   Growth differentiation factor-11; GDF-11; renal disease; cancer; human;
KW   muscle associated disorder; AIDS; cell proliferation; immunologic; fat;
KW   neurodegenerative disorder; adipose tissue disorder; animal food; muscle;
KW   obesity; nephrotropic; cytostatic; anti-HIV; anorectic; GDF-8.
XX
OS   Homo sapiens.
XX
PN   WO200006716-A1.
XX
PD   10-FEB-2000.
XX
PF   28-JUL-1999;   99WO-US17252.
XX
PR   28-JUL-1998;   98US-0123929.
XX
PA   (UYJO ) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI   Lee S,  McPherron AC;
XX
DR   WPI; 2000-195289/17.
XX
PT   Preparation of transgenic animal food product useful for treating renal
PT   and muscular disorders, comprises introducing transgene interfering
PT   with expression of growth differentiation factor-11 into embryo  -
XX
PS   Disclosure; Fig 4A; 97pp; English.
XX
CC   The invention relates to a method for producing animal food products with
CC   increased ribs content. The method comprises: (a) introducing a transgene
CC   which interferes with expression of growth differentiation factor-11
CC   (GDF-11), into an embryo; (b) allowing the embryo to mature; (c) cross-
CC   breeding the transgene-positive progeny; (d) processing these progeny to
CC   obtain the foodstuff. Modulators of GDF-11 are useful for treating acute
CC   or chronic renal disease, and various other muscle associated disorders
CC   e.g cancer, AIDS; cell proliferative disorders, neurodegenerative
CC   disorders; adipose tissue disorders and immunologic disorders. The animal
CC   food product comprises large amounts of muscle and meagre amounts of fats
CC   and cholesterol, hence useful in treating obesity and related disorders.
CC   The present sequence represents a human GDF-8 polypeptide, used for
CC   comparison studies.
XX
SQ   Sequence   375 AA;

  Query Match             100.0%;  Score 118;  DB 21;  Length 375;
  Best Local Similarity   100.0%;  Pred. No. 1.3e-10;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db     315 FVFLQKYPHTHLVHQANPRGS 335


RESULT 52
AAB73187
ID   AAB73187 standard; Protein; 375 AA.
XX
AC   AAB73187;
XX
DT   11-MAY-2001  (first entry)
XX
DE   Human GDF-8 #2.
XX
KW   Gene therapy; growth differentiation factor-8; GDF-8; AIDS; cachexia;
KW   neurodegenerative disease; amyotrophic lateral sclerosis; obesity;
KW   muscular dystrophy; musculodegenerative disease; tissue repair;
KW   muscle wasting disease; neuromuscular disorder; spinal cord injury;
KW   traumatic injury; congestive obstructive pulmonary disease.
XX
OS   Homo sapiens.
XX
PN   WO200112777-A2.
XX
PD   22-FEB-2001.
```

```
XX
PF   17-AUG-2000; 2000WO-US22884.
XX
PR   19-AUG-1999;   99US-0378238.
XX
PA   (UYJO ) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI   Lee S,  McPherron AC;
XX
DR   WPI; 2001-211209/21.
DR   N-PSDB; AAF63550.
XX
PT   New substantially purified growth differentiation factor-8 polypeptide,
PT   useful for treating muscle wasting disease, obesity, muscular
PT   dystrophy, neuromuscular disorder, acquired immunodeficiency syndrome
PT   and cachexia  -
XX
PS   Example 3; Fig 5; 124pp; English.
XX
CC   The present invention relates to growth differentiation factor-8 (GDF-8)
CC   coding sequences and proteins. The present sequence is a GDF-8 protein,
CC   which was isolated in the present invention. GDF-8 is useful for treating
CC   neurodegenerative diseases (e.g. amyotrophic lateral sclerosis and
CC   muscular dystrophy), musculodegenerative diseases or in tissue repair due
CC   to trauma, obesity and disorders related to abnormal proliferation of
CC   adipocytes. GDF-8 is also useful for treating malignancies of the various
CC   organ systems, particularly cells in muscle or adipose tissues and in
CC   gene therapy for the treatment of cell proliferative or immunological
CC   diseases mediated by GDF-8. In addition, GDF-8 is also useful for
CC   treating muscle wasting disease, neuromuscular disorder, spinal cord
CC   injury, traumatic injury, congestive obstructive pulmonary disease
CC   (COPD), AIDS or cachexia.
XX
SQ   Sequence   375 AA;

  Query Match             100.0%;  Score 118;  DB 22;  Length 375;
  Best Local Similarity   100.0%;  Pred. No. 1.3e-10;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db     315 FVFLQKYPHTHLVHQANPRGS 335


RESULT 53
AAB20131
ID   AAB20131 standard; Protein; 375 AA.
XX
AC   AAB20131;
XX
DT   30-APR-2001  (first entry)
XX
DE   Human growth differentiation factor 8.
XX
KW   Growth differentiation factor 8; GDF-8; myostatin; down-regulation;
KW   vaccine; muscle; meat; cachexia; cardiant; human.
XX
OS   Homo sapiens.
XX
PN   WO200105820-A2.
XX
PD   25-JAN-2001.
XX
PF   20-JUL-2000; 2000WO-DK00413.
XX
PR   20-JUL-1999;   99DK-0001014.
PR   26-JUL-1999;   99US-0145275.
XX
PA   (MEBI-) M & E BIOTECH AS.
XX
PI   Halkier T,  Mouritsen S,  Klysner S;
XX
DR   WPI; 2001-112680/12.
XX
PT   Increasing the muscle mass of animals used in meat production by down
PT   regulating growth differentiation factor 8 (GDF-8) activity in the
PT   animal through induction of anti-GDF-8 antibody production  -
XX
PS   Example 1; Page 74-76; 110pp; English.
XX
CC   The present sequence is that of human growth differentiation factor
CC   8 (GDF-8), also called myostatin.  It is an object of the invention
CC   to produce a recombinant therapeutic vaccine capable of effecting
CC   down-regulation of GDF-8 in order to increase the muscle growth
CC   rate of farm animals.  Variants of GDF-8 (see AAB20145-53) are
CC   provided that are capable of breaking autotolerance against
CC   autologous GDF-8.  These comprise a C-terminal portion of human
CC   GDF-8 in which a portion of the native sequence is replaced by a
CC   T-cell epitope such as the promiscuous tetanus toxin T-cell epitope
CC   P2 or P30.  Nucleic acids encoding the GDF-8 variants can be used
CC   for genetic immunisation of the animals.  Down-regulation of GDF-8
CC   activity is used to increase muscle mass by up to at least 45%
CC   in cattle, pigs and poultry used for meat production, reducing the
CC   need for antibiotic feed-additives.  Anti-GDF8 vaccines can be used
CC   to treat human diseases such as cancer cachexia where muscle atrophy
CC   is pronounced and for patients suffering from acute and chronic
CC   heart failure.
XX
SQ   Sequence   375 AA;

  Query Match             100.0%;  Score 118;  DB 22;  Length 375;
  Best Local Similarity   100.0%;  Pred. No. 1.3e-10;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db     315 FVFLQKYPHTHLVHQANPRGS 335


RESULT 54
AAB20133
ID   AAB20133 standard; Protein; 375 AA.
XX
AC   AAB20133;
XX
DT   30-APR-2001  (first entry)
XX
DE   Chicken growth differentiation factor 8.
XX
KW   Growth differentiation factor 8; GDF-8; myostatin; down-regulation;
KW   vaccine; muscle; meat; cachexia; cardiant; chicken.
XX
OS   Gallus sp.
XX
PN   WO200105820-A2.
XX
PD   25-JAN-2001.
XX
PF   20-JUL-2000; 2000WO-DK00413.
XX
PR   20-JUL-1999;   99DK-0001014.
PR   26-JUL-1999;   99US-0145275.
XX
PA   (MEBI-) M & E BIOTECH AS.
XX
PI   Halkier T,  Mouritsen S,  Klysner S;
XX
DR   WPI; 2001-112680/12.
XX
PT   Increasing the muscle mass of animals used in meat production by down
PT   regulating growth differentiation factor 8 (GDF-8) activity in the
PT   animal through induction of anti-GDF-8 antibody production  -
XX
PS   Example 1; Page 78-79; 110pp; English.
XX
CC   The present sequence is that of chicken growth differentiation factor
```

CC 8 (GDF-8), also called myostatin. It is an object of the invention
CC to produce a recombinant therapeutic vaccine capable of effecting
CC down-regulation of GDF-8 in order to increase the muscle growth
CC rate of farm animals. Variants of GDF-8 (see AAB20145-53) are
CC provided that are capable of breaking autotolerance against
CC autologous GDF-8. These comprise a C-terminal portion of human
CC GDF-8 in which a portion of the native sequence is replaced by a
CC T-cell epitope such as the promiscuous tetanus toxin T-cell epitope
CC P2 or P30. Nucleic acids encoding the GDF-8 variants can be used
CC for genetic immunisation of the animals. Down-regulation of GDF-8
CC activity is used to increase muscle mass by up to at least 45%
CC in cattle, pigs and poultry used for meat production, reducing the
CC need for antibiotic feed-additives. Anti-GDF8 vaccines can be used
CC to treat human diseases such as cancer cachexia where muscle atrophy
CC is pronounced and for patients suffering from acute and chronic
CC heart failure.
XX
SQ Sequence 375 AA;

Query Match 100.0%; Score 118; DB 22; Length 375;
Best Local Similarity 100.0%; Pred. No. 1.3e-10;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FVFLQKYPHTHLVHQANPRGS 21
||||||||||||||||||||
Db 315 FVFLQKYPHTHLVHQANPRGS 335

RESULT 55
AAB20135
ID AAB20135 standard; Protein; 375 AA.
XX
AC AAB20135;
XX
DT 30-APR-2001 (first entry)
XX
DE Cattle growth differentiation factor 8.
XX
KW Growth differentiation factor 8; GDF-8; myostatin; down-regulation;
KW vaccine; muscle; meat; cachexia; cardiant; cattle.
XX
OS Bos taurus.
XX
PN WO200105820-A2.
XX
PD 25-JAN-2001.
XX
PF 20-JUL-2000; 2000WO-DK00413.
XX
PR 20-JUL-1999; 99DK-0001014.
PR 26-JUL-1999; 99US-0145275.
XX
PA (MEBI-) M & E BIOTECH AS.
XX
PI Halkier T, Mouritsen S, Klysner S;
XX
DR WPI; 2001-112680/12.
XX
PT Increasing the muscle mass of animals used in meat production by down
PT regulating growth differentiation factor 8 (GDF-8) activity in the
PT animal through induction of anti-GDF-8 antibody production -
XX
PS Example 1; Page 82-83; 110pp; English.
XX
CC The present sequence is that of cattle growth differentiation factor
CC 8 (GDF-8), also called myostatin. It is an object of the invention
CC to produce a recombinant therapeutic vaccine capable of effecting
CC down-regulation of GDF-8 in order to increase the muscle growth
CC rate of farm animals. Variants of GDF-8 (see AAB20145-53) are
CC provided that are capable of breaking autotolerance against
CC autologous GDF-8. These comprise a C-terminal portion of human
CC GDF-8 in which a portion of the native sequence is replaced by a
CC T-cell epitope such as the promiscuous tetanus toxin T-cell epitope
CC P2 or P30. Nucleic acids encoding the GDF-8 variants can be used
CC for genetic immunisation of the animals. Down-regulation of GDF-8
CC activity is used to increase muscle mass by up to at least 45%
CC in cattle, pigs and poultry used for meat production, reducing the
CC need for antibiotic feed-additives. Anti-GDF8 vaccines can be used
CC to treat human diseases such as cancer cachexia where muscle atrophy
CC is pronounced and for patients suffering from acute and chronic
CC heart failure.
XX
SQ Sequence 375 AA;

Query Match 100.0%; Score 118; DB 22; Length 375;
Best Local Similarity 100.0%; Pred. No. 1.3e-10;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FVFLQKYPHTHLVHQANPRGS 21
||||||||||||||||||||
Db 315 FVFLQKYPHTHLVHQANPRGS 335

RESULT 56
AAB20138
ID AAB20138 standard; Protein; 375 AA.
XX
AC AAB20138;
XX
DT 30-APR-2001 (first entry)
XX
DE Pig growth differentiation factor 8.
XX
KW Growth differentiation factor 8; GDF-8; myostatin; down-regulation;
KW vaccine; muscle; meat; cachexia; cardiant; pig.
XX
OS Sus scrofa.
XX
PN WO200105820-A2.
XX
PD 25-JAN-2001.
XX
PF 20-JUL-2000; 2000WO-DK00413.
XX
PR 20-JUL-1999; 99DK-0001014.
PR 26-JUL-1999; 99US-0145275.
XX
PA (MEBI-) M & E BIOTECH AS.
XX
PI Halkier T, Mouritsen S, Klysner S;
XX
DR WPI; 2001-112680/12.
XX
PT Increasing the muscle mass of animals used in meat production by down
PT regulating growth differentiation factor 8 (GDF-8) activity in the
PT animal through induction of anti-GDF-8 antibody production -
XX
PS Example 1; Page 87-89; 110pp; English.
XX
CC The present sequence is that of pig growth differentiation factor
CC 8 (GDF-8), also called myostatin. It is an object of the invention
CC to produce a recombinant therapeutic vaccine capable of effecting
CC down-regulation of GDF-8 in order to increase the muscle growth
CC rate of farm animals. Variants of GDF-8 (see AAB20145-53) are
CC provided that are capable of breaking autotolerance against
CC autologous GDF-8. These comprise a C-terminal portion of human
CC GDF-8 in which a portion of the native sequence is replaced by a
CC T-cell epitope such as the promiscuous tetanus toxin T-cell epitope
CC P2 or P30. Nucleic acids encoding the GDF-8 variants can be used
CC for genetic immunisation of the animals. Down-regulation of GDF-8
CC activity is used to increase muscle mass by up to at least 45%
CC in cattle, pigs and poultry used for meat production, reducing the
CC need for antibiotic feed-additives. Anti-GDF8 vaccines can be used
CC to treat human diseases such as cancer cachexia where muscle atrophy
CC is pronounced and for patients suffering from acute and chronic
CC heart failure.

```
XX
SQ   Sequence   375 AA;

  Query Match             100.0%;  Score 118;  DB 22;  Length 375;
  Best Local Similarity   100.0%;  Pred. No. 1.3e-10;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      1 FVFLQKYPHTHLVHQANPRGS 21
          |||||||||||||||||||||
Db    315 FVFLQKYPHTHLVHQANPRGS 335


RESULT 57
AAB20140
ID   AAB20140 standard; Protein; 375 AA.
XX
AC   AAB20140;
XX
DT   30-APR-2001  (first entry)
XX
DE   Baboon growth differentiation factor 8.
XX
KW   Growth differentiation factor 8; GDF-8; myostatin; down-regulation;
KW   vaccine; muscle; meat; cachexia; cardiant; baboon.
XX
OS   Papio hamadryas.
XX
PN   WO200105820-A2.
XX
PD   25-JAN-2001.
XX
PF   20-JUL-2000; 2000WO-DK00413.
XX
PR   20-JUL-1999;   99DK-0001014.
PR   26-JUL-1999;   99US-0145275.
XX
PA   (MEBI-) M & E BIOTECH AS.
XX
PI   Halkier T,  Mouritsen S,  Klysner S;
XX
DR   WPI; 2001-112680/12.
XX
PT   Increasing the muscle mass of animals used in meat production by down
PT   regulating growth differentiation factor 8 (GDF-8) activity in the
PT   animal through induction of anti-GDF-8 antibody production  -
XX
PS   Example 1; Page 91-93; 110pp; English.
XX
CC   The present sequence is that of baboon growth differentiation factor
CC   8 (GDF-8), also called myostatin.  It is an object of the invention
CC   to produce a recombinant therapeutic vaccine capable of effecting
CC   down-regulation of GDF-8 in order to increase the muscle growth
CC   rate of farm animals.  Variants of GDF-8 (see AAB20145-53) are
CC   provided that are capable of breaking autotolerance against
CC   autologous GDF-8.  These comprise a C-terminal portion of human
CC   GDF-8 in which a portion of the native sequence is replaced by a
CC   T-cell epitope such as the promiscuous tetanus toxin T-cell epitope
CC   P2 or P30.  Nucleic acids encoding the GDF-8 variants can be used
CC   for genetic immunisation of the animals.  Down-regulation of GDF-8
CC   activity is used to increase muscle mass by up to at least 45%
CC   in cattle, pigs and poultry used for meat production, reducing the
CC   need for antibiotic feed-additives.  Anti-GDF8 vaccines can be used
CC   to treat human diseases such as cancer cachexia where muscle atrophy
CC   is pronounced and for patients suffering from acute and chronic
CC   heart failure.
XX
SQ   Sequence   375 AA;

  Query Match             100.0%;  Score 118;  DB 22;  Length 375;
  Best Local Similarity   100.0%;  Pred. No. 1.3e-10;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      1 FVFLQKYPHTHLVHQANPRGS 21
          |||||||||||||||||||||
Db    315 FVFLQKYPHTHLVHQANPRGS 335


RESULT 58
AAE18659
ID   AAE18659 standard; Protein; 375 AA.
XX
AC   AAE18659;
XX
DT   17-MAY-2002  (first entry)
XX
DE   Human promyostatin.
XX
KW   Human; promyostatin; myostatin; therapy; amyotrophic lateral sclerosis;
KW   neurodegenerative disease; GDF-11; muscular dystrophy; type II diabetes;
KW   muscle growth; myostatin prodomain; signal transduction; atherosclerosis;
KW   obesity; cachexia; hypertension; myocardial infarction; neuroprotective;
KW   muscular dystrophy; muscle wasting disorder; neuromuscular disorder;
KW   anorexia; growth differentiation factor; anorectic; immunomodulator;
KW   cardiant; metabolic.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   Domain          20..262
FT                   /note= "Myostatin prodomain; This region is specifically
FT                   claimed in claim 12 of the specification"
FT   Region          267..374
FT                   /note= "Mature myostatin; This region is specifically
FT                   claimed in claim 17 of the specification"
XX
PN   WO200209641-A2.
XX
PD   07-FEB-2002.
XX
PF   26-JUL-2001; 2001WO-US23510.
XX
PR   27-JUL-2000; 2000US-0628112.
XX
PA   (UYJO ) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI   Lee S,  Mcpherron AC;
XX
DR   WPI; 2002-179989/23.
DR   N-PSDB; AAD29742.
XX
PT   Novel substantially purified promyostatin polypeptide portion
PT   (myostatin prodomain or mature myostatin peptide), useful as myostatin
PT   signal transduction modulator in muscle cell or adipose tissue, for
PT   treating obesity  -
XX
PS   Claim 3; Page 143-144; 175pp; English.
XX
CC   The present invention relates to a purified promyostatin polypeptide
CC   portion. A myostatin peptide is useful as a target for treatment of
CC   neurodegenerative diseases such as amyotrophic lateral sclerosis or
CC   muscular dystrophy. A myostatin prodomain inhibits myostatin signal
CC   transduction, while mature myostatin peptide referred as myostatin is
CC   useful for inducing myostatin signal transduction by interacting
CC   specifically with myostatin receptor expressed on the surface of the
CC   cell. Modulating myostatin signal transduction is useful for regulating
CC   skeletal muscle mass, where promyostatin portion is a negative regulator
CC   or muscle growth. Modulating myostatin signal transduction in a muscle
CC   cell or adipose tissue is useful for treating pathological conditions
CC   associated with myostatin such as obesity and type II diabetes, cachexia,
CC   conditions associated with obesity, e.g. atherosclerosis, hypertension,
CC   myocardial infarction, muscle wasting disorders such as muscular
CC   dystrophy, neuromuscular disorders, or anorexia. Myostatin prodomain is
CC   useful for modulating the growth of muscle or adipose tissue in an
CC   organism. Myostatin prodomain is useful for increasing muscle mass or
CC   reducing fat content of an organism which is useful as a food source, and
CC   myostatin peptide is useful for decreasing the growth of muscle tissue in
```

CC an organism e.g. an organism detrimental to an environment. Mutant
CC promyostatin which has dominant negative activity with respect to
CC myostatin or growth differentiation factor (GDF)-11 is useful for
CC reducing or inhibiting myostatin signal transduction. The present
CC sequence is human promyostatin.
XX
SQ Sequence 375 AA;

Query Match 100.0%; Score 118; DB 23; Length 375;
Best Local Similarity 100.0%; Pred. No. 1.3e-10;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FVFLQKYPHTHLVHQANPRGS 21
||||||||||||||||||||
Db 315 FVFLQKYPHTHLVHQANPRGS 335

RESULT 59
AAE18662
ID AAE18662 standard; Protein; 375 AA.
XX
AC AAE18662;
XX
DT 17-MAY-2002 (first entry)
XX
DE Chicken promyostatin.
XX
KW Chicken; promyostatin; myostatin; therapy; amyotrophic lateral sclerosis;
KW neurodegenerative disease; GDF-11; muscular dystrophy; type II diabetes;
KW muscle growth; myostatin prodomain; signal transduction; atherosclerosis;
KW obesity; cachexia; hypertension; myocardial infarction; neuroprotective;
KW muscular dystrophy; muscle wasting disorder; neuromuscular disorder;
KW anorexia; growth differentiation factor; anorectic; immunomodulator;
KW cardiant; metabolic.
XX
OS Gallus gallus.
XX
FH Key Location/Qualifiers
FT Domain 20..262
FT /note= "Myostatin prodomain; This region is specifically
FT claimed in claim 12 of the specification"
FT Region 267..374
FT /note= "Mature myostatin; This region is specifically
FT claimed in claim 17 of the specification"
XX
PN WO200209641-A2.
XX
PD 07-FEB-2002.
XX
PF 26-JUL-2001; 2001WO-US23510.
XX
PR 27-JUL-2000; 2000US-0628112.
XX
PA (UYJO) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI Lee S, Mcpherron AC;
XX
DR WPI; 2002-179989/23.
DR N-PSDB; AAD29745.
XX
PT Novel substantially purified promyostatin polypeptide portion
PT (myostatin prodomain or mature myostatin peptide), useful as myostatin
PT signal transduction modulator in muscle cell or adipose tissue, for
PT treating obesity -
XX
PS Claim 4; Page 150-152; 175pp; English.
XX
CC The present invention relates to a purified promyostatin polypeptide
CC portion. A myostatin peptide is useful as a target for treatment of
CC neurodegenerative diseases such as amyotrophic lateral sclerosis or
CC muscular dystrophy. A myostatin prodomain inhibits myostatin signal
CC transduction, while mature myostatin peptide referred as myostatin is
CC useful for inducing myostatin signal transduction by interacting
CC specifically with myostatin receptor expressed on the surface of the
CC cell. Modulating myostatin signal transduction is useful for regulating
CC skeletal muscle mass, where promyostatin portion is a negative regulator
CC or muscle growth. Modulating myostatin signal transduction in a muscle
CC cell or adipose tissue is useful for treating pathological conditions
CC associated with myostatin such as obesity and type II diabetes, cachexia,
CC conditions associated with obesity, e.g. atherosclerosis, hypertension,
CC myocardial infarction, muscle wasting disorders such as muscular
CC dystrophy, neuromuscular disorders, or anorexia. Myostatin prodomain is
CC useful for modulating the growth of muscle or adipose tissue in an
CC organism. Myostatin prodomain is useful for increasing muscle mass or
CC reducing fat content of an organism which is useful as a food source, and
CC myostatin peptide is useful for decreasing the growth of muscle tissue in
CC an organism e.g. an organism detrimental to an environment. Mutant
CC promyostatin which has dominant negative activity with respect to
CC myostatin or growth differentiation factor (GDF)-11 is useful for
CC reducing or inhibiting myostatin signal transduction. The present
CC sequence is chicken promyostatin.
CC Note: The present sequence is also shown in sequence listing (page 152-
CC 153) of the specification, but lacks as amino acid residue at its
CC N-terminal region.
XX
SQ Sequence 375 AA;

Query Match 100.0%; Score 118; DB 23; Length 375;
Best Local Similarity 100.0%; Pred. No. 1.3e-10;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FVFLQKYPHTHLVHQANPRGS 21
||||||||||||||||||||
Db 315 FVFLQKYPHTHLVHQANPRGS 335

RESULT 60
AAE18663
ID AAE18663 standard; Protein; 375 AA.
XX
AC AAE18663;
XX
DT 17-MAY-2002 (first entry)
XX
DE Baboon promyostatin.
XX
KW Baboon; promyostatin; myostatin; therapy; amyotrophic lateral sclerosis;
KW neurodegenerative disease; GDF-11; muscular dystrophy; type II diabetes;
KW muscle growth; myostatin prodomain; signal transduction; atherosclerosis;
KW obesity; cachexia; hypertension; myocardial infarction; neuroprotective;
KW muscular dystrophy; muscle wasting disorder; neuromuscular disorder;
KW anorexia; growth differentiation factor; anorectic; immunomodulator;
KW cardiant; metabolic.
XX
OS Papio sp.
XX
FH Key Location/Qualifiers
FT Domain 20..262
FT /note= "Myostatin prodomain; This region is specifically
FT claimed in claim 12 of the specification"
FT Region 267..374
FT /note= "Mature myostatin; This region is specifically
FT claimed in claim 17 of the specification"
XX
PN WO200209641-A2.
XX
PD 07-FEB-2002.
XX
PF 26-JUL-2001; 2001WO-US23510.
XX
PR 27-JUL-2000; 2000US-0628112.
XX
PA (UYJO) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI Lee S, Mcpherron AC;
XX

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DR   WPI; 2002-179989/23.
DR   N-PSDB; AAD29746.
XX
PT   Novel substantially purified promyostatin polypeptide portion
PT   (myostatin prodomain or mature myostatin peptide), useful as myostatin
PT   signal transduction modulator in muscle cell or adipose tissue, for
PT   treating obesity  -
XX
PS   Claim 5; Page 155; 175pp; English.
XX
CC   The present invention relates to a purified promyostatin polypeptide
CC   portion. A myostatin peptide is useful as a target for treatment of
CC   neurodegenerative diseases such as amyotrophic lateral sclerosis or
CC   muscular dystrophy. A myostatin prodomain inhibits myostatin signal
CC   transduction, while mature myostatin peptide referred as myostatin is
CC   useful for inducing myostatin signal transduction by interacting
CC   specifically with myostatin receptor expressed on the surface of the
CC   cell. Modulating myostatin signal transduction is useful for regulating
CC   skeletal muscle mass, where promyostatin portion is a negative regulator
CC   or muscle growth. Modulating myostatin signal transduction in a muscle
CC   cell or adipose tissue is useful for treating pathological conditions
CC   associated with myostatin such as obesity and type II diabetes, cachexia,
CC   conditions associated with obesity, e.g. atherosclerosis, hypertension,
CC   myocardial infarction, muscle wasting disorders such as muscular
CC   dystrophy, neuromuscular disorders, or anorexia. Myostatin prodomain is
CC   useful for modulating the growth of muscle or adipose tissue in an
CC   organism. Myostatin prodomain is useful for increasing muscle mass or
CC   reducing fat content of an organism which is useful as a food source, and
CC   myostatin peptide is useful for decreasing the growth of muscle tissue in
CC   an organism e.g. an organism detrimental to an environment. Mutant
CC   promyostatin which has dominant negative activity with respect to
CC   myostatin or growth differentiation factor (GDF)-11 is useful for
CC   reducing or inhibiting myostatin signal transduction. The present
CC   sequence is baboon promyostatin.
XX
SQ   Sequence   375 AA;

  Query Match             100.0%;  Score 118;  DB 23;  Length 375;
  Best Local Similarity   100.0%;  Pred. No. 1.3e-10;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      1 FVFLQKYPHTHLVHQANPRGS 21
          |||||||||||||||||||||
Db    315 FVFLQKYPHTHLVHQANPRGS 335


RESULT 61
AAE18664
ID   AAE18664 standard; Protein; 375 AA.
XX
AC   AAE18664;
XX
DT   17-MAY-2002  (first entry)
XX
DE   Bovine promyostatin.
XX
KW   Bovine; promyostatin; myostatin; therapy; amyotrophic lateral sclerosis;
KW   neurodegenerative disease; GDF-11; muscular dystrophy; type II diabetes;
KW   muscle growth; myostatin prodomain; signal transduction; atherosclerosis;
KW   obesity; cachexia; hypertension; myocardial infarction; neuroprotective;
KW   muscular dystrophy; muscle wasting disorder; neuromuscular disorder;
KW   anorexia; growth differentiation factor; anorectic; immunomodulator;
KW   cardiant; metabolic.
XX
OS   Bos sp.
XX
FH   Key             Location/Qualifiers
FT   Domain          20..262
FT                   /note= "Myostatin prodomain; This region is specifically
FT                   claimed in claim 12 of the specification"
FT   Region          267..374
FT                   /note= "Mature myostatin; This region is specifically
FT                   claimed in claim 17 of the specification"
XX
PN   WO200209641-A2.
XX
PD   07-FEB-2002.
XX
PF   26-JUL-2001; 2001WO-US23510.
XX
PR   27-JUL-2000; 2000US-0628112.
XX
PA   (UYJO ) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI   Lee S,  Mcpherron AC;
XX
DR   WPI; 2002-179989/23.
DR   N-PSDB; AAD29747.
XX
PT   Novel substantially purified promyostatin polypeptide portion
PT   (myostatin prodomain or mature myostatin peptide), useful as myostatin
PT   signal transduction modulator in muscle cell or adipose tissue, for
PT   treating obesity  -
XX
PS   Claim 5; Page 157-158; 175pp; English.
XX
CC   The present invention relates to a purified promyostatin polypeptide
CC   portion. A myostatin peptide is useful as a target for treatment of
CC   neurodegenerative diseases such as amyotrophic lateral sclerosis or
CC   muscular dystrophy. A myostatin prodomain inhibits myostatin signal
CC   transduction, while mature myostatin peptide referred as myostatin is
CC   useful for inducing myostatin signal transduction by interacting
CC   specifically with myostatin receptor expressed on the surface of the
CC   cell. Modulating myostatin signal transduction is useful for regulating
CC   skeletal muscle mass, where promyostatin portion is a negative regulator
CC   or muscle growth. Modulating myostatin signal transduction in a muscle
CC   cell or adipose tissue is useful for treating pathological conditions
CC   associated with myostatin such as obesity and type II diabetes, cachexia,
CC   conditions associated with obesity, e.g. atherosclerosis, hypertension,
CC   myocardial infarction, muscle wasting disorders such as muscular
CC   dystrophy, neuromuscular disorders, or anorexia. Myostatin prodomain is
CC   useful for modulating the growth of muscle or adipose tissue in an
CC   organism. Myostatin prodomain is useful for increasing muscle mass or
CC   reducing fat content of an organism which is useful as a food source, and
CC   myostatin peptide is useful for decreasing the growth of muscle tissue in
CC   an organism e.g. an organism detrimental to an environment. Mutant
CC   promyostatin which has dominant negative activity with respect to
CC   myostatin or growth differentiation factor (GDF)-11 is useful for
CC   reducing or inhibiting myostatin signal transduction. The present
CC   sequence is bovine promyostatin.
XX
SQ   Sequence   375 AA;

  Query Match             100.0%;  Score 118;  DB 23;  Length 375;
  Best Local Similarity   100.0%;  Pred. No. 1.3e-10;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      1 FVFLQKYPHTHLVHQANPRGS 21
          |||||||||||||||||||||
Db    315 FVFLQKYPHTHLVHQANPRGS 335


RESULT 62
AAE18665
ID   AAE18665 standard; Protein; 375 AA.
XX
AC   AAE18665;
XX
DT   17-MAY-2002  (first entry)
XX
DE   Porcine promyostatin.
XX
KW   Porcine; promyostatin; myostatin; therapy; amyotrophic lateral sclerosis;
KW   neurodegenerative disease; GDF-11; muscular dystrophy; type II diabetes;
KW   muscle growth; myostatin prodomain; signal transduction; atherosclerosis;
KW   obesity; cachexia; hypertension; myocardial infarction; neuroprotective;
```

KW muscular dystrophy; muscle wasting disorder; neuromuscular disorder;
KW anorexia; growth differentiation factor; anorectic; immunomodulator;
KW cardiant; metabolic.
XX
OS Sus scrofa.
XX
FH Key Location/Qualifiers
FT Domain 20..262
FT /note= "Myostatin prodomain; This region is specifically
FT claimed in claim 12 of the specification"
FT Region 267..374
FT /note= "Mature myostatin; This region is specifically
FT claimed in claim 17 of the specification"
XX
PN WO200209641-A2.
XX
PD 07-FEB-2002.
XX
PF 26-JUL-2001; 2001WO-US23510.
XX
PR 27-JUL-2000; 2000US-0628112.
XX
PA (UYJO) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI Lee S, Mcpherron AC;
XX
DR WPI; 2002-179989/23.
DR N-PSDB; AAD29748.
XX
PT Novel substantially purified promyostatin polypeptide portion
PT (myostatin prodomain or mature myostatin peptide), useful as myostatin
PT signal transduction modulator in muscle cell or adipose tissue, for
PT treating obesity -
XX
PS Claim 5; Page 160-161; 175pp; English.
XX
CC The present invention relates to a purified promyostatin polypeptide
CC portion. A myostatin peptide is useful as a target for treatment of
CC neurodegenerative diseases such as amyotrophic lateral sclerosis or
CC muscular dystrophy. A myostatin prodomain inhibits myostatin signal
CC transduction, while mature myostatin peptide referred as myostatin is
CC useful for inducing myostatin signal transduction by interacting
CC specifically with myostatin receptor expressed on the surface of the
CC cell. Modulating myostatin signal transduction is useful for regulating
CC skeletal muscle mass, where promyostatin portion is a negative regulator
CC or muscle growth. Modulating myostatin signal transduction in a muscle
CC cell or adipose tissue is useful for treating pathological conditions
CC associated with myostatin such as obesity and type II diabetes, cachexia,
CC conditions associated with obesity, e.g. atherosclerosis, hypertension,
CC myocardial infarction, muscle wasting disorders such as muscular
CC dystrophy, neuromuscular disorders, or anorexia. Myostatin prodomain is
CC useful for modulating the growth of muscle or adipose tissue in an
CC organism. Myostatin prodomain is useful for increasing muscle mass or
CC reducing fat content of an organism which is useful as a food source, and
CC myostatin peptide is useful for decreasing the growth of muscle tissue in
CC an organism e.g. an organism detrimental to an environment. Mutant
CC promyostatin which has dominant negative activity with respect to
CC myostatin or growth differentiation factor (GDF)-11 is useful for
CC reducing or inhibiting myostatin signal transduction. The present
CC sequence is procine promyostatin.
XX
SQ Sequence 375 AA;

Query Match 100.0%; Score 118; DB 23; Length 375;
Best Local Similarity 100.0%; Pred. No. 1.3e-10;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FVFLQKYPHTHLVHQANPRGS 21
||||||||||||||||||||||
Db 315 FVFLQKYPHTHLVHQANPRGS 335

RESULT 63

AAE18667
ID AAE18667 standard; Protein; 375 AA.
XX
AC AAE18667;
XX
DT 17-MAY-2002 (first entry)
XX
DE Meleagris gallopavo promyostatin.
XX
KW Promyostatin; myostatin; therapy; amyotrophic lateral sclerosis;
KW neurodegenerative disease; GDF-11; muscular dystrophy; type II diabetes;
KW muscle growth; myostatin prodomain; signal transduction; atherosclerosis;
KW obesity; cachexia; hypertension; myocardial infarction; neuroprotective;
KW muscular dystrophy; muscle wasting disorder; neuromuscular disorder;
KW anorexia; growth differentiation factor; anorectic; immunomodulator;
KW cardiant; metabolic.
XX
OS Meleagris gallopavo.
XX
FH Key Location/Qualifiers
FT Domain 20..262
FT /note= "Myostatin prodomain; This region is specifically
FT claimed in claim 12 of the specification"
FT Region 267..374
FT /note= "Mature myostatin; This region is specifically
FT claimed in claim 17 of the specification"
XX
PN WO200209641-A2.
XX
PD 07-FEB-2002.
XX
PF 26-JUL-2001; 2001WO-US23510.
XX
PR 27-JUL-2000; 2000US-0628112.
XX
PA (UYJO) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI Lee S, Mcpherron AC;
XX
DR WPI; 2002-179989/23.
DR N-PSDB; AAD29750.
XX
PT Novel substantially purified promyostatin polypeptide portion
PT (myostatin prodomain or mature myostatin peptide), useful as myostatin
PT signal transduction modulator in muscle cell or adipose tissue, for
PT treating obesity -
XX
PS Claim 5; Page 165-166; 175pp; English.
XX
CC The present invention relates to a purified promyostatin polypeptide
CC portion. A myostatin peptide is useful as a target for treatment of
CC neurodegenerative diseases such as amyotrophic lateral sclerosis or
CC muscular dystrophy. A myostatin prodomain inhibits myostatin signal
CC transduction, while mature myostatin peptide referred as myostatin is
CC useful for inducing myostatin signal transduction by interacting
CC specifically with myostatin receptor expressed on the surface of the
CC cell. Modulating myostatin signal transduction is useful for regulating
CC skeletal muscle mass, where promyostatin portion is a negative regulator
CC or muscle growth. Modulating myostatin signal transduction in a muscle
CC cell or adipose tissue is useful for treating pathological conditions
CC associated with myostatin such as obesity and type II diabetes, cachexia,
CC conditions associated with obesity, e.g. atherosclerosis, hypertension,
CC myocardial infarction, muscle wasting disorders such as muscular
CC dystrophy, neuromuscular disorders, or anorexia. Myostatin prodomain is
CC useful for modulating the growth of muscle or adipose tissue in an
CC organism. Myostatin prodomain is useful for increasing muscle mass or
CC reducing fat content of an organism which is useful as a food source, and
CC myostatin peptide is useful for decreasing the growth of muscle tissue in
CC an organism e.g. an organism detrimental to an environment. Mutant
CC promyostatin which has dominant negative activity with respect to
CC myostatin or growth differentiation factor (GDF)-11 is useful for
CC reducing or inhibiting myostatin signal transduction. The present
CC sequence is Meleagris gallopavo promyostatin.

```
XX
SQ   Sequence   375 AA;

  Query Match            100.0%;  Score 118;  DB 23;  Length 375;
  Best Local Similarity  100.0%;  Pred. No. 1.3e-10;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      1 FVFLQKYPHTHLVHQANPRGS 21
          |||||||||||||||||||||
Db    315 FVFLQKYPHTHLVHQANPRGS 335


RESULT 64
AAU75620
ID   AAU75620 standard; Protein; 375 AA.
XX
AC   AAU75620;
XX
DT   21-MAY-2002  (first entry)
XX
DE   Human promyostatin.
XX
KW   Human; promyostatin; immunomodulator; antidepressant; anorectic;
KW   neuroprotective; antidiabetic; growth differentiation factor receptor;
KW   myostatin receptor; GDF; muscle tissue; adipose tissue; cachexia;
KW   wasting disorder; anorexia; muscular dystrophy; neuromuscular disease;
KW   metabolic disorder; obesity; type II diabetes.
XX
OS   Homo sapiens.
XX
PN   WO200210214-A2.
XX
PD   07-FEB-2002.
XX
PF   26-JUL-2001; 2001WO-US23615.
XX
PR   27-JUL-2000; 2000US-0626896.
XX
PA   (UYJO ) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI   Lee S,  McPherron AC;
XX
DR   WPI; 2002-217116/27.
DR   N-PSDB; ABK15393.
XX
PT   New growth differentiation factor (GDF) receptors and modulators,
PT   useful for ameliorating wasting disorders such as cachexia, muscular
PT   dystrophy or neuromuscular disease or a metabolic disorder such as
PT   obesity or type II diabetes -
XX
PS   Claim 22; Fig 1; 184pp; English.
XX
CC   The invention relates to a substantially purified growth differentiation
CC   factor (GDF) receptor, specifically a myostatin receptor, or its
CC   functional peptide portion. Also described is a method of modulating an
CC   effect of myostatin on a cell by contacting the cell with an agent that
CC   affects myostatin signal transduction in the cell. The method and the
CC   receptor are useful for ameliorating the severity of a pathological
CC   condition characterised by an abnormal amount, development or metabolic
CC   activity of muscle or adipose tissue in a subject, particularly a wasting
CC   disorder (e.g. cachexia, anorexia, muscular dystrophy or neuromuscular
CC   disease) or a metabolic disorder (e.g. obesity or type II diabetes). The
CC   present sequence represents the amino acid sequence of human
CC   promyostatin.
XX
SQ   Sequence   375 AA;

  Query Match            100.0%;  Score 118;  DB 23;  Length 375;
  Best Local Similarity  100.0%;  Pred. No. 1.3e-10;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      1 FVFLQKYPHTHLVHQANPRGS 21
          |||||||||||||||||||||
Db    315 FVFLQKYPHTHLVHQANPRGS 335


RESULT 65
AAU75624
ID   AAU75624 standard; Protein; 375 AA.
XX
AC   AAU75624;
XX
DT   21-MAY-2002  (first entry)
XX
DE   Baboon promyostatin.
XX
KW   Baboon; promyostatin; immunomodulator; antidepressant; anorectic;
KW   neuroprotective; antidiabetic; growth differentiation factor receptor;
KW   myostatin receptor; GDF; muscle tissue; adipose tissue; cachexia;
KW   wasting disorder; anorexia; muscular dystrophy; neuromuscular disease;
KW   metabolic disorder; obesity; type II diabetes.
XX
OS   Papio sp.
XX
PN   WO200210214-A2.
XX
PD   07-FEB-2002.
XX
PF   26-JUL-2001; 2001WO-US23615.
XX
PR   27-JUL-2000; 2000US-0626896.
XX
PA   (UYJO ) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI   Lee S,  McPherron AC;
XX
DR   WPI; 2002-217116/27.
DR   N-PSDB; ABK15397.
XX
PT   New growth differentiation factor (GDF) receptors and modulators,
PT   useful for ameliorating wasting disorders such as cachexia, muscular
PT   dystrophy or neuromuscular disease or a metabolic disorder such as
PT   obesity or type II diabetes -
XX
PS   Claim 22; Fig 1; 184pp; English.
XX
CC   The invention relates to a substantially purified growth differentiation
CC   factor (GDF) receptor, specifically a myostatin receptor, or its
CC   functional peptide portion. Also described is a method of modulating an
CC   effect of myostatin on a cell by contacting the cell with an agent that
CC   affects myostatin signal transduction in the cell. The method and the
CC   receptor are useful for ameliorating the severity of a pathological
CC   condition characterised by an abnormal amount, development or metabolic
CC   activity of muscle or adipose tissue in a subject, particularly a wasting
CC   disorder (e.g. cachexia, anorexia, muscular dystrophy or neuromuscular
CC   disease) or a metabolic disorder (e.g. obesity or type II diabetes). The
CC   present sequence represents the amino acid sequence of baboon
CC   promyostatin.
XX
SQ   Sequence   375 AA;

  Query Match            100.0%;  Score 118;  DB 23;  Length 375;
  Best Local Similarity  100.0%;  Pred. No. 1.3e-10;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      1 FVFLQKYPHTHLVHQANPRGS 21
          |||||||||||||||||||||
Db    315 FVFLQKYPHTHLVHQANPRGS 335


RESULT 66
AAU75625
ID   AAU75625 standard; Protein; 375 AA.
XX
AC   AAU75625;
XX
```

```
DT  21-MAY-2002  (first entry)
XX
DE  Bovine promyostatin.
XX
KW  Bovine; promyostatin; immunomodulator; antidepressant; anorectic;
KW  neuroprotective; antidiabetic; growth differentiation factor receptor;
KW  myostatin receptor; GDF; muscle tissue; adipose tissue; cachexia;
KW  wasting disorder; anorexia; muscular dystrophy; neuromuscular disease;
KW  metabolic disorder; obesity; type II diabetes.
XX
OS  Bos sp.
XX
PN  WO200210214-A2.
XX
PD  07-FEB-2002.
XX
PF  26-JUL-2001; 2001WO-US23615.
XX
PR  27-JUL-2000; 2000US-0626896.
XX
PA  (UYJO ) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI  Lee S,  McPherron AC;
XX
DR  WPI; 2002-217116/27.
DR  N-PSDB; ABK15398.
XX
PT  New growth differentiation factor (GDF) receptors and modulators,
PT  useful for ameliorating wasting disorders such as cachexia, muscular
PT  dystrophy or neuromuscular disease or a metabolic disorder such as
PT  obesity or type II diabetes -
XX
PS  Claim 22; Fig 1; 184pp; English.
XX
CC  The invention relates to a substantially purified growth differentiation
CC  factor (GDF) receptor, specifically a myostatin receptor, or its
CC  functional peptide portion. Also described is a method of modulating an
CC  effect of myostatin on a cell by contacting the cell with an agent that
CC  affects myostatin signal transduction in the cell. The method and the
CC  receptor are useful for ameliorating the severity of a pathological
CC  condition characterised by an abnormal amount, development or metabolic
CC  activity of muscle or adipose tissue in a subject, particularly a wasting
CC  disorder (e.g. cachexia, anorexia, muscular dystrophy or neuromuscular
CC  disease) or a metabolic disorder (e.g. obesity or type II diabetes). The
CC  present sequence represents the amino acid sequence of bovine
CC  promyostatin.
XX
SQ  Sequence  375 AA;

  Query Match             100.0%;  Score 118;  DB 23;  Length 375;
  Best Local Similarity   100.0%;  Pred. No. 1.3e-10;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      1 FVFLQKYPHTHLVHQANPRGS 21
          |||||||||||||||||||||
Db    315 FVFLQKYPHTHLVHQANPRGS 335


RESULT 67
AAU75626
ID  AAU75626 standard; Protein; 375 AA.
XX
AC  AAU75626;
XX
DT  21-MAY-2002  (first entry)
XX
DE  Porcine promyostatin.
XX
KW  Pig; promyostatin; immunomodulator; antidepressant; anorectic;
KW  neuroprotective; antidiabetic; growth differentiation factor receptor;
KW  myostatin receptor; GDF; muscle tissue; adipose tissue; cachexia;
KW  wasting disorder; anorexia; muscular dystrophy; neuromuscular disease;
KW  metabolic disorder; obesity; type II diabetes.
XX
OS  Sus sp.
XX
PN  WO200210214-A2.
XX
PD  07-FEB-2002.
XX
PF  26-JUL-2001; 2001WO-US23615.
XX
PR  27-JUL-2000; 2000US-0626896.
XX
PA  (UYJO ) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI  Lee S,  McPherron AC;
XX
DR  WPI; 2002-217116/27.
DR  N-PSDB; ABK15399.
XX
PT  New growth differentiation factor (GDF) receptors and modulators,
PT  useful for ameliorating wasting disorders such as cachexia, muscular
PT  dystrophy or neuromuscular disease or a metabolic disorder such as
PT  obesity or type II diabetes -
XX
PS  Claim 22; Fig 1; 184pp; English.
XX
CC  The invention relates to a substantially purified growth differentiation
CC  factor (GDF) receptor, specifically a myostatin receptor, or its
CC  functional peptide portion. Also described is a method of modulating an
CC  effect of myostatin on a cell by contacting the cell with an agent that
CC  affects myostatin signal transduction in the cell. The method and the
CC  receptor are useful for ameliorating the severity of a pathological
CC  condition characterised by an abnormal amount, development or metabolic
CC  activity of muscle or adipose tissue in a subject, particularly a wasting
CC  disorder (e.g. cachexia, anorexia, muscular dystrophy or neuromuscular
CC  disease) or a metabolic disorder (e.g. obesity or type II diabetes). The
CC  present sequence represents the amino acid sequence of porcine
CC  promyostatin.
XX
SQ  Sequence  375 AA;

  Query Match             100.0%;  Score 118;  DB 23;  Length 375;
  Best Local Similarity   100.0%;  Pred. No. 1.3e-10;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      1 FVFLQKYPHTHLVHQANPRGS 21
          |||||||||||||||||||||
Db    315 FVFLQKYPHTHLVHQANPRGS 335


RESULT 68
AAU75628
ID  AAU75628 standard; Protein; 375 AA.
XX
AC  AAU75628;
XX
DT  21-MAY-2002  (first entry)
XX
DE  Turkey promyostatin.
XX
KW  Turkey; promyostatin; immunomodulator; antidepressant; anorectic;
KW  neuroprotective; antidiabetic; growth differentiation factor receptor;
KW  myostatin receptor; GDF; muscle tissue; adipose tissue; cachexia;
KW  wasting disorder; anorexia; muscular dystrophy; neuromuscular disease;
KW  metabolic disorder; obesity; type II diabetes.
XX
OS  Meleagris gallopavo.
XX
PN  WO200210214-A2.
XX
PD  07-FEB-2002.
XX
PF  26-JUL-2001; 2001WO-US23615.
XX
```

```
PR   27-JUL-2000; 2000US-0626896.
XX
PA   (UYJO ) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI   Lee S,  McPherron AC;
XX
DR   WPI; 2002-217116/27.
DR   N-PSDB; ABK15401.
XX
PT   New growth differentiation factor (GDF) receptors and modulators,
PT   useful for ameliorating wasting disorders such as cachexia, muscular
PT   dystrophy or neuromuscular disease or a metabolic disorder such as
PT   obesity or type II diabetes -
XX
PS   Claim 22; Fig 1; 184pp; English.
XX
CC   The invention relates to a substantially purified growth differentiation
CC   factor (GDF) receptor, specifically a myostatin receptor, or its
CC   functional peptide portion. Also described is a method of modulating an
CC   effect of myostatin on a cell by contacting the cell with an agent that
CC   affects myostatin signal transduction in the cell. The method and the
CC   receptor are useful for ameliorating the severity of a pathological
CC   condition characterised by an abnormal amount, development or metabolic
CC   activity of muscle or adipose tissue in a subject, particularly a wasting
CC   disorder (e.g. cachexia, anorexia, muscular dystrophy or neuromuscular
CC   disease) or a metabolic disorder (e.g. obesity or type II diabetes). The
CC   present sequence represents the amino acid sequence of turkey
CC   promyostatin.
XX
SQ   Sequence   375 AA;

  Query Match             100.0%;  Score 118;  DB 23;  Length 375;
  Best Local Similarity   100.0%;  Pred. No. 1.3e-10;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db     315 FVFLQKYPHTHLVHQANPRGS 335


RESULT 69
AAR63159
ID   AAR63159 standard; Protein; 376 AA.
XX
AC   AAR63159;
XX
DT   23-JUN-1995  (first entry)
XX
DE   Mouse growth differentiation factor-8 protein.
XX
KW   Growth differentiation factor-8; GDF-8; cell proliferation;
KW   adipocyte; obesity; transforming growth factor-beta.
XX
OS   Mus musculus.
XX
PN   WO9421681-A.
XX
PD   29-SEP-1994.
XX
PF   18-MAR-1994;   94WO-US03019.
XX
PR   19-MAR-1993;   93US-0033923.
XX
PA   (UYJO ) UNIV JOHNS HOPKINS SCHOOL MED.
XX
PI   Lee S,  Mcpherron AC;
XX
DR   WPI; 1994-316943/39.
DR   Q-PSDB; Q76371.
XX
PT   New growth differentiation factor 8 - useful for treatment and
PT   diagnosis of cell proliferative disorders esp. of muscle.
XX
PS   Claim 3; Page 47; 84pp; English.
XX
CC   GDF-8 can be used to maintain cells before transplantation; to
CC   improve efficiency of cell fusion and to treat obesity or diseases
CC   related to abnormal adipocyte proliferation.
XX
SQ   Sequence   376 AA;

  Query Match             100.0%;  Score 118;  DB 15;  Length 376;
  Best Local Similarity   100.0%;  Pred. No. 1.3e-10;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db     316 FVFLQKYPHTHLVHQANPRGS 336


RESULT 70
AAW69889
ID   AAW69889 standard; Protein; 376 AA.
XX
AC   AAW69889;
XX
DT   07-DEC-1998  (first entry)
XX
DE   Rat growth differentiation factor-8.
XX
KW   Growth differentiation factor-8; GDF-8; rat; transgenic animal;
KW   transforming growth factor-beta; muscle; meat; inhibitor; obesity;
KW   neuromuscular disease; muscular dystrophy; cachexia; AIDS; cancer;
KW   therapy.
XX
OS   Rattus sp.
XX
FH   Key             Location/Qualifiers
FT   Cleavage-site   264..267
FT   Protein         268..376
FT                   /label= Mat_protein
XX
PN   WO9833887-A1.
XX
PD   06-AUG-1998.
XX
PF   05-FEB-1998;   98WO-US02479.
XX
PR   23-MAY-1997;   97US-0862445.
PR   05-FEB-1997;   97US-0795071.
PR   28-APR-1997;   97US-0847910.
XX
PA   (UYJO ) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI   Lee S,  McPherron AC;
XX
DR   WPI; 1998-437444/37.
DR   N-PSDB; AAV45820.
XX
PT   Transgenic animals with gene for growth differentiation factor-8
PT   disrupted - have increased muscle and reduced cholesterol contents,
PT   also use of GDF-8 inhibitors for treating cancer, obesity,
PT   neuromuscular disease
XX
PS   Example 9; Fig 14d; 125pp; English.
XX
CC   This is the amino acid sequence of rat growth differentiation
CC   factor-8 (GDF-8), a novel member of the transforming growth factor-
CC   beta superfamily that appears to relate to various cell
CC   proliferative disorders, especially those involving muscle, nerve
CC   and adipose tissue.  The sequence was deduced from a cDNA clone
CC   (see AAV45820) isolated from a skeletal muscle cDNA library.  The
CC   invention provides novel mammalian and avian GDF-8 proteins (see
CC   AAW69883-92).  A transgenic non-human animal is claimed in which
CC   GDF-8 expression is disrupted or interfered with.  Also claimed
CC   are: (1) chicken or turkey eggs or meat, beef, milk, pork and lamb
```

CC from these animals; (2) method for increasing muscle mass in
CC animals by administering an antibody (Ab) that binds to GDF-8; (3)
CC inhibiting the action of GDF-8 by treating foetal or adult muscle
CC or progenitor cells with a GDF-8 inhibitor; (4) isolated nucleic
CC acid encoding a GDF-8 protein truncated by loss of the C-terminal
CC active fragment. The transgenic animals have increased muscle mass
CC and for poultry reduced cholesterol contents. Method (3) is used
CC to treat muscle wasting or neuromuscular diseases, muscular atrophy
CC and aging, particularly muscular dystrophy, spinal cord or
CC traumatic injuries, congestive or obstructive lung disease, AIDS
CC and cachexia. Method (4) is used to treat cancer of muscle,
CC connective tissue and bone, or obesity. Also (not claimed) GDF-8
CC can be used to maintain myoblasts intended for transplanting or to
CC improve efficiency of fusion. Ab can be used to detect and
CC quantify GDF-8 (particularly in muscle, for diagnosis or monitoring),
CC also for immunotherapy and in vivo imaging.
XX
SQ Sequence 376 AA;

Query Match 100.0%; Score 118; DB 19; Length 376;
Best Local Similarity 100.0%; Pred. No. 1.3e-10;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FVFLQKYPHTHLVHQANPRGS 21
||||||||||||||||||||
Db 316 FVFLQKYPHTHLVHQANPRGS 336

RESULT 71
AAW69890
ID AAW69890 standard; Protein; 376 AA.
XX
AC AAW69890;
XX
DT 07-DEC-1998 (first entry)
XX
DE Turkey growth differentiation factor-8.
XX
KW Growth differentiation factor-8; GDF-8; turkey; transgenic animal;
KW transforming growth factor-beta; muscle; meat; inhibitor; obesity;
KW neuromuscular disease; muscular dystrophy; cachexia; AIDS; cancer;
KW therapy.
XX
OS Meleagris gallopavo.
XX
FH Key Location/Qualifiers
FT Cleavage-site 263..266
FT Protein 267..375
FT /label= Mat_protein
XX
PN WO9833887-A1.
XX
PD 06-AUG-1998.
XX
PF 05-FEB-1998; 98WO-US02479.
XX
PR 23-MAY-1997; 97US-0862445.
PR 05-FEB-1997; 97US-0795071.
PR 28-APR-1997; 97US-0847910.
XX
PA (UYJO) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI Lee S, McPherron AC;
XX
DR WPI; 1998-437444/37.
DR N-PSDB; AAV45821.
XX
PT Transgenic animals with gene for growth differentiation factor-8
PT disrupted - have increased muscle and reduced cholesterol contents,
PT also use of GDF-8 inhibitors for treating cancer, obesity,
PT neuromuscular disease
XX
PS Example 9; Fig 14e; 125pp; English.
XX
CC This is the amino acid sequence of turkey growth differentiation
CC factor-8 (GDF-8), a novel member of the transforming growth factor-
CC beta superfamily that appears to relate to various cell
CC proliferative disorders, especially those involving muscle, nerve
CC and adipose tissue. The sequence was deduced from a cDNA clone
CC (see AAV45821) isolated from a skeletal muscle cDNA library. The
CC invention provides novel mammalian and avian GDF-8 proteins (see
CC AAW69883-92). A transgenic non-human animal is claimed in which
CC GDF-8 expression is disrupted or interfered with. Also claimed
CC are: (1) chicken or turkey eggs or meat, beef, milk, pork and lamb
CC from these animals; (2) method for increasing muscle mass in
CC animals by administering an antibody (Ab) that binds to GDF-8; (3)
CC inhibiting the action of GDF-8 by treating foetal or adult muscle
CC or progenitor cells with a GDF-8 inhibitor; (4) isolated nucleic
CC acid encoding a GDF-8 protein truncated by loss of the C-terminal
CC active fragment. The transgenic animals have increased muscle mass
CC and for poultry reduced cholesterol contents. Method (3) is used
CC to treat muscle wasting or neuromuscular diseases, muscular atrophy
CC and aging, particularly muscular dystrophy, spinal cord or
CC traumatic injuries, congestive or obstructive lung disease, AIDS
CC and cachexia. Method (4) is used to treat cancer of muscle,
CC connective tissue and bone, or obesity. Also (not claimed) GDF-8
CC can be used to maintain myoblasts intended for transplanting or to
CC improve efficiency of fusion. Ab can be used to detect and
CC quantify GDF-8 (particularly in muscle, for diagnosis or monitoring),
CC also for immunotherapy and in vivo imaging.
XX
SQ Sequence 376 AA;

Query Match 100.0%; Score 118; DB 19; Length 376;
Best Local Similarity 100.0%; Pred. No. 1.3e-10;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FVFLQKYPHTHLVHQANPRGS 21
||||||||||||||||||||
Db 315 FVFLQKYPHTHLVHQANPRGS 335

RESULT 72
AAW30689
ID AAW30689 standard; Protein; 376 AA.
XX
AC AAW30689;
XX
DT 07-DEC-1998 (first entry)
XX
DE Murine growth differentiation factor-8.
XX
KW Growth differentiation factor-8; GDF-8; mouse; transgenic animal;
KW transforming growth factor-beta; muscle; meat; inhibitor; obesity;
KW neuromuscular disease; muscular dystrophy; cachexia; AIDS; cancer;
KW therapy.
XX
OS Mus sp.
XX
FH Key Location/Qualifiers
FT Modified-site 72..74
FT /note= "Asn is N-glycosylated"
FT Cleavage-site 264..267
FT Protein 268..376
FT /label= Mat_protein
XX
PN WO9833887-A1.
XX
PD 06-AUG-1998.
XX
PF 05-FEB-1998; 98WO-US02479.
XX
PR 23-MAY-1997; 97US-0862445.
PR 05-FEB-1997; 97US-0795071.
PR 28-APR-1997; 97US-0847910.
XX

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PA   (UYJO ) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI   Lee S,  McPherron AC;
XX
DR   WPI; 1998-437444/37.
DR   N-PSDB; AAV42113.
XX
PT   Transgenic animals with gene for growth differentiation factor-8
PT   disrupted - have increased muscle and reduced cholesterol contents,
PT   also use of GDF-8 inhibitors for treating cancer, obesity,
PT   neuromuscular disease
XX
PS   Example 3; Fig 5a; 125pp; English.
XX
CC   This is the amino acid sequence of mouse growth differentiation
CC   factor-8 (GDF-8), a novel member of the transforming growth factor-
CC   beta superfamily that appears to relate to various cell
CC   proliferative disorders, especially those involving muscle, nerve
CC   and adipose tissue.  The sequence was deduced from a cDNA clone
CC   (see AAV42113) isolated from a skeletal muscle cDNA library.  The
CC   invention provides novel mammalian and avian GDF-8 proteins (see
CC   AAW69883-92).  A transgenic non-human animal is claimed in which
CC   GDF-8 expression is disrupted or interfered with.  Also claimed
CC   are: (1) chicken or turkey eggs or meat, beef, milk, pork and lamb
CC   from these animals; (2) method for increasing muscle mass in
CC   animals by administering an antibody (Ab) that binds to GDF-8; (3)
CC   inhibiting the action of GDF-8 by treating foetal or adult muscle
CC   or progenitor cells with a GDF-8 inhibitor; (4) isolated nucleic
CC   acid encoding a GDF-8 protein truncated by loss of the C-terminal
CC   active fragment.  The transgenic animals have increased muscle mass
CC   and for poultry reduced cholesterol contents.  Method (3) is used
CC   to treat muscle wasting or neuromuscular diseases, muscular atrophy
CC   and aging, particularly muscular dystrophy, spinal cord or
CC   traumatic injuries, congestive or obstructive lung disease, AIDS
CC   and cachexia.  Method (4) is used to treat cancer of muscle,
CC   connective tissue and bone, or obesity.  Also (not claimed) GDF-8
CC   can be used to maintain myoblasts intended for transplanting or to
CC   improve efficiency of fusion.  Ab can be used to detect and
CC   quantify GDF-8 (particularly in muscle, for diagnosis or monitoring),
CC   also for immunotherapy and in vivo imaging.
XX
SQ   Sequence   376 AA;

  Query Match             100.0%;  Score 118;  DB 19;  Length 376;
  Best Local Similarity   100.0%;  Pred. No. 1.3e-10;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db     316 FVFLQKYPHTHLVHQANPRGS 336


RESULT 73
AAY33837
ID   AAY33837 standard; Protein; 376 AA.
XX
AC   AAY33837;
XX
DT   08-DEC-1999  (first entry)
XX
DE   Amino acid sequence of murine Growth Differentiation Factor-8.
XX
KW   growth differentiation factor; tissue growth; muscle growth;
KW   cell differentiation; animal feed; muscle disorder;
KW   bone degeneration; nerve degeneration; GDF-8; development;
KW   transforming growth factor beta; TGF-beta.
XX
OS   Mus musculus.
XX
FH   Key             Location/Qualifiers
FT   Modified-site   72
FT                   /label= N-glycosylation_site
FT   Cleavage-site   264..267
FT                   /label= Potential_cleavage_site
XX
PN   WO9940181-A1.
XX
PD   12-AUG-1999.
XX
PF   05-FEB-1999;   99WO-US02511.
XX
PR   28-JUL-1998;   98US-0124180.
PR   05-FEB-1998;   98US-0019070.
XX
PA   (UYJO ) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI   Lee S,  McPherron AC;
XX
DR   WPI; 1999-494289/41.
DR   N-PSDB; AAZ06448.
XX
PT   New differentiation factor useful for treating neurodegenerative
PT   diseases
XX
PS   Example 3; Fig 5a; 138pp; English.
XX
CC   This is the amino acid sequence of the Growth Differentiation Factor-8
CC   (GDF-8) which is encoded by the nucleotide sequence AAZ06448.
CC   The 2676 base pair sequence contains a single long open reading frame
CC   beginning with a methionine codon at nucleotide 104 and extending to a
CC   TGA stop codon at nucleotide 1232. Upstream of the putative initiating
CC   methionine codon is an in-frame stop codon at nucleotide 23. The
CC   predicted pre-pro-GDF-8 protein is 76 amino acids in length. The
CC   sequence contains a core of hydrophobic amino acids at the N-terminus
CC   suggestive of a signal peptide for secretion, one potential
CC   N-glycosylation site at asparagine 72, a putative RXXR proteolytic
CC   cleavage site at amino acids 264-267, and a C-terminal region showing
CC   significant homology to the known members of the TGF-beta superfamily.
CC   Cleavage of the precursor protein at the putative RXXR site would
CC   generate a mature C-terminal GDF-8 fragment 109 amino acids in length
CC   with a predicted molecular weight of approximately 12,400.
CC   GDF-8 has been shown to result in increased bone and muscle mass (such
CC   as ribs) when expressed in reduced amounts. GDF-8 minus transgenic
CC   animals and forms of animal feed that can inhibit/reduce production of
CC   GDF-8 are of commercial interest.
CC   GDF-8 expression may also have a role in the therapy of abnormal growth
CC   of muscle, bone or adipose tissue. A GDF-8 monoclonal antibody, GDF-8
CC   antisense molecule or dominant negative polypeptide could be used with
CC   foetal or adult muscle cells, bone cells or progenitor cells. These
CC   agents can be administered to a patient suffering from a disorder such
CC   as muscle wasting disease, neuro muscular disorder, muscle atrophy,
CC   osteoporosis, bone degenerative diseases, obesity or other adipocyte
CC   cell disorders, and aging for example.
XX
SQ   Sequence   376 AA;

  Query Match             100.0%;  Score 118;  DB 20;  Length 376;
  Best Local Similarity   100.0%;  Pred. No. 1.3e-10;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db     316 FVFLQKYPHTHLVHQANPRGS 336


RESULT 74
AAY33842
ID   AAY33842 standard; Protein; 376 AA.
XX
AC   AAY33842;
XX
DT   08-DEC-1999  (first entry)
XX
DE   Amino acid sequence of Rat Growth Differentiation Factor-8.
XX
KW   growth differentiation factor; tissue growth; muscle growth;
```

KW cell differentiation; animal feed; muscle disorder;
KW bone degeneration; nerve degeneration; GDF-8; development;
KW transforming growth factor beta; TGF-beta.
XX
OS Rattus sp.
XX
PN WO9940181-A1.
XX
PD 12-AUG-1999.
XX
PF 05-FEB-1999; 99WO-US02511.
XX
PR 28-JUL-1998; 98US-0124180.
PR 05-FEB-1998; 98US-0019070.
XX
PA (UYJO) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI Lee S, McPherron AC;
XX
DR WPI; 1999-494289/41.
DR N-PSDB; AAZ06456.
XX
PT New differentiation factor useful for treating neurodegenerative
PT diseases
XX
PS Example 9; Fig 14d; 138pp; English.
XX
CC This is the amino acid sequence of the Rat Growth
CC Differentiation Factor-8 (GDF-8). Skeletal muscle cDNA libraries from
CC this species were screened with the murine GDF-8 probe, in order to
CC isolate the GDF-8. The absolute conservation of the C-terminal region
CC between species as evolutionary far apart as humans and chickens,
CC baboons and turkeys, suggests that this region will be highly conserved
CC in many other species as well.
CC GDF-8 has been shown to result in increased bone and muscle mass (such
CC as ribs) when expressed in reduced amounts. GDF-8 minus transgenic
CC animals and forms of animal feed that can inhibit/reduce production of
CC GDF-8 are of commercial interest.
CC GDF-8 expression may also have a role in the therapy of abnormal growth
CC of muscle, bone or adipose tissue. A GDF-8 monoclonal antibody, GDF-8
CC antisense molecule or dominant negative polypeptide could be used with
CC foetal or adult muscle cells, bone cells or progenitor cells. These
CC agents can be administered to a patient suffering from a disorder such
CC as muscle wasting disease, neuro muscular disorder, muscle atrophy,
CC osteoporosis, bone degenerative diseases, obesity or other adipocyte
CC cell disorders, and aging for example.
XX
SQ Sequence 376 AA;

Query Match 100.0%; Score 118; DB 20; Length 376;
Best Local Similarity 100.0%; Pred. No. 1.3e-10;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FVFLQKYPHTHLVHQANPRGS 21
||||||||||||||||||||
Db 316 FVFLQKYPHTHLVHQANPRGS 336

RESULT 75
AAY33930
ID AAY33930 standard; peptide; 376 AA.
XX
AC AAY33930;
XX
DT 09-NOV-1999 (first entry)
XX
DE Amino acid sequence of mouse myostatin.
XX
KW Myostatin; mouse; rabbit; human; baboon; bovine; porcine; ovine; chick;
KW turkey; zebrafish; immune response; vaccine; body weight; muscle mass;
KW mammary gland tissue; lactation; feed uptake; muscle degeneration; GDF11.
XX
OS Mus sp.
XX
PN WO9942573-A1.
XX
PD 26-AUG-1999.
XX
PF 19-FEB-1999; 99WO-CA00128.
XX
PR 19-FEB-1998; 98US-0075213.
XX
PA (BIOS-) BIOSTAR INC.
XX
PI Barker CA, Morsey M;
XX
DR WPI; 1999-527471/44.
XX
PT New myostatin peptide, multimers and immunoconjugates for eliciting
PT an immune response in a vertebrate against a myostatin immunogen
XX
PS Claim 4; Fig 1A-D; 109pp; English.
XX
CC The invention provides myostatin peptides consisting of 3-100 amino
CC acids, derived from a region of mouse, rabbit, human, baboon, bovine,
CC porcine, ovine, chick, turkey or zebrafish myostatin (see sequences
CC AAY33930-939). The myostatin peptides are derived preferably from a
CC region of amino acid residues 1-275, 25-300, 50-325 or 75-350 of the
CC above sequences. The peptides and the nucleic acids encoding the peptides
CC are useful as vaccines for eliciting an immune response in a vertebrate
CC against a myostatin immunogen. They result in increasing body weight,
CC muscle mass, number and size of muscle cells, muscle strength, mammary
CC gland tissue, lactation, appetite or feed uptake, life span of the
CC vertebrate, and cause a reduction in body fat content, useful for muscle
CC wasting conditions. The vaccines are also useful for treating a disorder
CC which comprises degeneration or wasting of muscle in a vertebrate, and
CC useful for modulating GDF11 activity. The present sequence represents
CC a mouse myostatin seqeunce.
XX
SQ Sequence 376 AA;

Query Match 100.0%; Score 118; DB 20; Length 376;
Best Local Similarity 100.0%; Pred. No. 1.3e-10;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FVFLQKYPHTHLVHQANPRGS 21
||||||||||||||||||||
Db 316 FVFLQKYPHTHLVHQANPRGS 336

RESULT 76
AAY33931
ID AAY33931 standard; peptide; 376 AA.
XX
AC AAY33931;
XX
DT 09-NOV-1999 (first entry)
XX
DE Amino acid sequence of rat myostatin.
XX
KW Myostatin; mouse; rabbit; human; baboon; bovine; porcine; ovine; chick;
KW turkey; zebrafish; immune response; vaccine; body weight; muscle mass;
KW mammary gland tissue; lactation; feed uptake; muscle degeneration; GDF11.
XX
OS Rattus sp.
XX
PN WO9942573-A1.
XX
PD 26-AUG-1999.
XX
PF 19-FEB-1999; 99WO-CA00128.
XX
PR 19-FEB-1998; 98US-0075213.
XX
PA (BIOS-) BIOSTAR INC.
XX

PI Barker CA, Morsey M;
XX
DR WPI; 1999-527471/44.
XX
PT New myostatin peptide, multimers and immunoconjugates for eliciting
PT an immune response in a vertebrate against a myostatin immunogen
XX
PS Claim 4; Fig 1A-D; 109pp; English.
XX
CC The invention provides myostatin peptides consisting of 3-100 amino
CC acids, derived from a region of mouse, rabbit, human, baboon, bovine,
CC porcine, ovine, chick, turkey or zebrafish myostatin (see sequences
CC AAY33930-939). The myostatin peptides are derived preferably from a
CC region of amino acid residues 1-275, 25-300, 50-325 or 75-350 of the
CC above sequences. The peptides and the nucleic acids encoding the peptides
CC are useful as vaccines for eliciting an immune response in a vertebrate
CC against a myostatin immunogen. They result in increasing body weight,
CC muscle mass, number and size of muscle cells, muscle strength, mammary
CC gland tissue, lactation, appetite or feed uptake, life span of the
CC vertebrate, and cause a reduction in body fat content, useful for muscle
CC wasting conditions. The vaccines are also useful for treating a disorder
CC which comprises degeneration or wasting of muscle in a vertebrate, and
CC useful for modulating GDF11 activity. The present sequence represents
CC a rat myostatin seqeunce.
XX
SQ Sequence 376 AA;

Query Match 100.0%; Score 118; DB 20; Length 376;
Best Local Similarity 100.0%; Pred. No. 1.3e-10;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FVFLQKYPHTHLVHQANPRGS 21
||||||||||||||||||||
Db 316 FVFLQKYPHTHLVHQANPRGS 336

RESULT 77
AAY31193
ID AAY31193 standard; Protein; 376 AA.
XX
AC AAY31193;
XX
DT 29-OCT-1999 (first entry)
XX
DE Rat GDF-8 protein.
XX
KW GDF-8; growth differentiation factor receptor; GDF-11; therapy; human;
KW veterinary; medicine; treatment; muscle tissue disease; wasting disease;
KW neuromuscular disorder; muscular atrophy; spinal cord injury; aging; fat;
KW traumatic injury; acquired immune deficiency syndrome; cachexia; rat;
KW congenital obstructive pulmonary disease; transgenic animal; transgene;
KW food animal; cholesterol; muscle mass; diagnostic.
XX
OS Rattus sp.
XX
PN WO9906559-A1.
XX
PD 11-FEB-1999.
XX
PF 28-JUL-1998; 98WO-US15598.
XX
PR 01-AUG-1997; 97US-0054461.
XX
PA (UYJO) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI Lee S, McPherron A;
XX
DR WPI; 1999-153789/13.
DR N-PSDB; AAZ09369.
XX
PT Recombinant cells that express growth-differentiation factor
PT receptors - and related antibodies, nucleic acids, vector,
PT transformed cells, peptide fragments and transgenic animals, for
PT treatment and diagnosis of muscle tissue diseases
XX
PS Examples; Fig 2d; 89pp; English.
XX
CC This invention describes novel recombinant cell lines that express
CC growth-differentiation factor-8 (GDF-8) receptor polypeptide or GDF-11
CC receptor polypeptide. The GDF receptors are used to identify specific
CC (ant)agonists, potentially useful therapeutically in human or veterinary
CC medicine. Antibodies derived from the products of the invention are used
CC to treat muscle tissue diseases (particularly wasting diseases,
CC neuromuscular disorders, muscular atrophy and aging, e.g. spinal cord and
CC traumatic injury, congenital obstructive pulmonary diseases, acquired
CC immune deficiency syndrome and cachexia). Transgenic, non-human animals
CC that express the products of the invention from a transgene present in
CC germ and somatic cells, specifically where GDF-8 receptor is expressed,
CC may be food animals and have decreased fat and cholesterol contents and
CC increased muscle mass. Peptides derived from the products of the
CC invention and GDF-receptor binding and blocking agents, are reagents and
CC diagnostic agents for studying muscle wasting diseases and for
CC development of therapeutic agents. This sequence represents the rat GDF-8
CC protein which is used in the method of the invention.
XX
SQ Sequence 376 AA;

Query Match 100.0%; Score 118; DB 20; Length 376;
Best Local Similarity 100.0%; Pred. No. 1.3e-10;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FVFLQKYPHTHLVHQANPRGS 21
||||||||||||||||||||
Db 316 FVFLQKYPHTHLVHQANPRGS 336

RESULT 78
AAY31188
ID AAY31188 standard; Protein; 376 AA.
XX
AC AAY31188;
XX
DT 29-OCT-1999 (first entry)
XX
DE Murine GDF-8 protein.
XX
KW GDF-8; growth differentiation factor receptor; GDF-11; therapy; human;
KW veterinary; medicine; treatment; muscle tissue disease; wasting disease;
KW neuromuscular disorder; muscular atrophy; spinal cord injury; aging; fat;
KW traumatic injury; acquired immune deficiency syndrome; cachexia;
KW congenital obstructive pulmonary disease; transgenic animal; transgene;
KW food animal; cholesterol; muscle mass; diagnostic; murine.
XX
OS Mus sp.
XX
PN WO9906559-A1.
XX
PD 11-FEB-1999.
XX
PF 28-JUL-1998; 98WO-US15598.
XX
PR 01-AUG-1997; 97US-0054461.
XX
PA (UYJO) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI Lee S, McPherron A;
XX
DR WPI; 1999-153789/13.
DR N-PSDB; AAY31188.
XX
PT Recombinant cells that express growth-differentiation factor
PT receptors - and related antibodies, nucleic acids, vector,
PT transformed cells, peptide fragments and transgenic animals, for
PT treatment and diagnosis of muscle tissue diseases
XX
PS Examples; Fig 1A-B; 89pp; English.

```
XX
CC   This invention describes novel recombinant cell lines that express
CC   growth-differentiation factor-8 (GDF-8) receptor polypeptide or GDF-11
CC   receptor polypeptide. The GDF receptors are used to identify specific
CC   (ant)agonists, potentially useful therapeutically in human or veterinary
CC   medicine. Antibodies derived from the products of the invention are used
CC   to treat muscle tissue diseases (particularly wasting diseases,
CC   neuromuscular disorders, muscular atrophy and aging, e.g. spinal cord and
CC   traumatic injury, congenital obstructive pulmonary diseases, acquired
CC   immune deficiency syndrome and cachexia). Transgenic, non-human animals
CC   that express the products of the invention from a transgene present in
CC   germ and somatic cells, specifically where GDF-8 receptor is expressed,
CC   may be food animals and have decreased fat and cholesterol contents and
CC   increased muscle mass. Peptides derived from the products of the
CC   invention and GDF-receptor binding and blocking agents, are reagents and
CC   diagnostic agents for studying muscle wasting diseases and for
CC   development of therapeutic agents. This sequence represents the murine
CC   GDF-8 protein which is used in the method of the invention.
XX
SQ   Sequence   376 AA;

  Query Match             100.0%;  Score 118;  DB 20;  Length 376;
  Best Local Similarity   100.0%;  Pred. No. 1.3e-10;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db     316 FVFLQKYPHTHLVHQANPRGS 336


RESULT 79
AAW97886
ID   AAW97886 standard; Protein; 376 AA.
XX
AC   AAW97886;
XX
DT   07-JUN-1999  (first entry)
XX
DE   Murine myostatin.
XX
KW   Myostatin; mouse; transforming growth factor beta;
KW   double muscling; muscle hyperplasia; transgenic animal.
XX
OS   Mus sp.
XX
PN   WO9902667-A1.
XX
PD   21-JAN-1999.
XX
PF   14-JUL-1998;   98WO-IB01197.
XX
PR   15-JAN-1998;   98US-0007761.
PR   14-JUL-1997;   97US-0891789.
XX
PA   (UYLI-) UNIV LIEGE.
XX
PI   Georges M,  Grobet L,  Poncelet D;
XX
DR   WPI; 1999-120869/10.
DR   N-PSDB; AAX24417.
XX
PT   Increasing muscle mass in mammals  - by decreasing myostatin
PT   expression
XX
PS   Disclosure; Page 60; 75pp; English.
XX
CC   This is the amino acid sequence of murine myostatin, a member of
CC   the transforming growth factor beta superfamily.  The invention
CC   relates to factors affecting muscle development in mammals,
CC   including the detection of a mutation in the bovine myostatin
CC   gene (see AAX24415-16).  Cattle of the Belgian Blue breed homozygous
CC   for the mutant gene are double-muscled.  A new method of increasing
CC   muscle mass of a mammal having myostatin-expressing muscle cells,
CC   comprises administration of a nucleic acid molecule substantially
CC   complementary to at least a portion of mRNA encoding myostatin
CC   (including murine myostatin) and of sufficient length to reduce
CC   myostatin expression and thus increase muscle mass.  A ribozyme may
CC   also be used.  Also claimed are: a method for determining muscular
CC   hyperplasia (MH) in a mammal using primers based upstream and
CC   downstream of the mutation; a diagnostic kit for determining
CC   the genotype of a sample of genetic material; a method for
CC   determining MH in a mammal; a method for determining double
CC   muscling in a bovine animal; a method for determining the myostatin
CC   genotype of an animal; purified myostatin; isolated nucleic acids;
CC   a microbial host cell; a probe based on the myostatin gene
CC   mutation; transgenic mammals having MH phenotype; and a myostatin
CC   knockout animal; and a transgenic bovine having a gene encoding
CC   active myostatin.
XX
SQ   Sequence   376 AA;

  Query Match             100.0%;  Score 118;  DB 20;  Length 376;
  Best Local Similarity   100.0%;  Pred. No. 1.3e-10;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db     316 FVFLQKYPHTHLVHQANPRGS 336


RESULT 80
AAB21084
ID   AAB21084 standard; Protein; 376 AA.
XX
AC   AAB21084;
XX
DT   19-DEC-2000  (first entry)
XX
DE   Mouse wild-type GDF-8.
XX
KW   GDF-8; growth differentiation factor-8; myostatin;
KW   mouse; murine; activity inhibitor; muscle-associated disorder; cancer;
KW   muscular dystrophy; spinal cord injury; traumatic injury;
KW   congestive obstructive pulmonary disease; AIDS; cachexia;
KW   adipocyte proliferative disorder; obesity; glucose transport modulation;
KW   diabetes.
XX
OS   Mus sp.
XX
FH   Key             Location/Qualifiers
FT   Domain          1..266
FT                   /note= "Mouse GDF-8 pro-domain"
XX
PN   WO200043781-A2.
XX
PD   27-JUL-2000.
XX
PF   21-JAN-2000; 2000WO-US01552.
XX
PR   21-JAN-1999;   99US-0116639.
PR   10-JUN-1999;   99US-0138363.
XX
PA   (META-) METAMORPHIX INC.
XX
PI   Topouzis S,  Wright JF,  Ratovitski T,  Liang L,  Brady JL,  Sinha D;
PI   Yaswen-Corkery L;
XX
DR   WPI; 2000-505849/45.
DR   N-PSDB; AAA90289.
XX
PT   Novel method for identifying inhibitors of growth differentiation
PT   factor (GDF) proteins which used to treat a variety of diseases  -
XX
PS   Example 6; Fig 13; 122pp; English.
XX
CC   The invention relates to inhibitors of GDFs (growth differentiation
```

```
CC   factors), and methods of identifying such inhibitors. The GDF inhibitors
CC   of the invention encompass GDF-specific ribozymes (AAA90265-A90268 and
CC   AAA90294-A90297), GDF-8 antisense oligonucleotides (AAA90269-A90288), and
CC   GDF protein fragments or variants (AAB21078, AAB21082-B21083 and
CC   AAB21085-B21086). The methods are used to identify inhibitors of GDF
CC   proteins, especially GDF-8 (also known as myostatin) and GDF-11. The
CC   inhibitors can be used to modulate GDF-8 or GDF-11 activity or
CC   expression. They can be used to treat diseases or disorders characterised
CC   by aberrant expression of GDF-8 or GDF-11, such as muscle-associated
CC   disorders including cancer, muscular dystrophy, spinal cord injury,
CC   traumatic injury, congestive obstructive pulmonary disease, AIDS and
CC   cachexia, and may also be used to treat obesity and other disorders
CC   related to abnormal proliferation of adipocytes. They may also be used
CC   to treat diabetes via the modulation of glucose transport (e.g., by
CC   increasing the activity of the GLUT4 glucose transporter). The
CC   present sequence represents wild-type mouse GDF-8.
XX
SQ   Sequence   376 AA;

  Query Match             100.0%;  Score 118;  DB 21;  Length 376;
  Best Local Similarity   100.0%;  Pred. No. 1.3e-10;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db     316 FVFLQKYPHTHLVHQANPRGS 336


RESULT 81
AAB21085
ID   AAB21085 standard; Protein; 376 AA.
XX
AC   AAB21085;
XX
DT   19-DEC-2000  (first entry)
XX
DE   Mouse dominant negative mutant GDF-8.
XX
KW   GDF-8; growth differentiation factor-8; myostatin;
KW   mouse; murine; activity inhibitor; muscle-associated disorder; cancer;
KW   muscular dystrophy; spinal cord injury; traumatic injury;
KW   congestive obstructive pulmonary disease; AIDS; cachexia;
KW   adipocyte proliferative disorder; obesity; glucose transport modulation;
KW   diabetes; dominant negative mutant; uncleavable; mutein.
XX
OS   Mus sp.
OS   Synthetic.
XX
FH   Key             Location/Qualifiers
FT   Misc-difference 264
FT                   /note= "This residue replaces the wild-type Arg"
FT   Misc-difference 265
FT                   /note= "This residue replaces the wild-type Ser"
FT   Misc-difference 266
FT                   /note= "This residue replaces the wild-type Arg"
FT   Misc-difference 267
FT                   /note= "This residue replaces the wild-type Arg"
XX
PN   WO200043781-A2.
XX
PD   27-JUL-2000.
XX
PF   21-JAN-2000; 2000WO-US01552.
XX
PR   21-JAN-1999;   99US-0116639.
PR   10-JUN-1999;   99US-0138363.
XX
PA   (META-) METAMORPHIX INC.
XX
PI   Topouzis S,  Wright JF,  Ratovitski T,  Liang L,  Brady JL,  Sinha D;
PI   Yaswen-Corkery L;
XX
DR   WPI; 2000-505849/45.
DR   N-PSDB; AAA90290.
XX
PT   Novel method for identifying inhibitors of growth differentiation
PT   factor (GDF) proteins which used to treat a variety of diseases  -
XX
PS   Example 6; Page -; 122pp; English.
XX
CC   The invention relates to inhibitors of GDFs (growth differentiation
CC   factors), and methods of identifying such inhibitors. The GDF inhibitors
CC   of the invention encompass GDF-specific ribozymes (AAA90265-A90268 and
CC   AAA90294-A90297), GDF-8 antisense oligonucleotides (AAA90269-A90288), and
CC   GDF protein fragments or variants (AAB21078, AAB21082-B21083 and
CC   AAB21085-B21086). The methods are used to identify inhibitors of GDF
CC   proteins, especially GDF-8 (also known as myostatin) and GDF-11. The
CC   inhibitors can be used to modulate GDF-8 or GDF-11 activity or
CC   expression. They can be used to treat diseases or disorders characterised
CC   by aberrant expression of GDF-8 or GDF-11, such as muscle-associated
CC   disorders including cancer, muscular dystrophy, spinal cord injury,
CC   traumatic injury, congestive obstructive pulmonary disease, AIDS and
CC   cachexia, and may also be used to treat obesity and other disorders
CC   related to abnormal proliferation of adipocytes. They may also be used
CC   to treat diabetes via the modulation of glucose transport (e.g., by
CC   increasing the activity of the GLUT4 glucose transporter). The
CC   present sequence represents a mouse dominant negative GDF-8 mutant, in
CC   which the pro-domain cannot be cleaved to form the mature protein.
CC   Note: The present sequence is not shown in the specification, but
CC   is derived from the mouse wild-type GDF-8 (AAB21084) given in figure 13.
XX
SQ   Sequence   376 AA;

  Query Match             100.0%;  Score 118;  DB 21;  Length 376;
  Best Local Similarity   100.0%;  Pred. No. 1.3e-10;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db     316 FVFLQKYPHTHLVHQANPRGS 336


RESULT 82
AAY77568
ID   AAY77568 standard; Protein; 376 AA.
XX
AC   AAY77568;
XX
DT   08-MAY-2000  (first entry)
XX
DE   Murine myostatin protein sequence.
XX
KW   Growth differentiation factor-11; GDF-11; renal disease; cancer; mouse;
KW   muscle associated disorder; AIDS; cell proliferation; immunologic; fat;
KW   neurodegenerative disorder; adipose tissue disorder; animal food; muscle;
KW   obesity; nephrotropic; cytostatic; anti-HIV; anorectic; myostatin.
XX
OS   Mus sp.
XX
PN   WO200006716-A1.
XX
PD   10-FEB-2000.
XX
PF   28-JUL-1999;   99WO-US17252.
XX
PR   28-JUL-1998;   98US-0123929.
XX
PA   (UYJO ) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI   Lee S,  McPherron AC;
XX
DR   WPI; 2000-195289/17.
XX
PT   Preparation of transgenic animal food product useful for treating renal
PT   and muscular disorders, comprises introducing transgene interfering
PT   with expression of growth differentiation factor-11 into embryo  -
```

```
XX
PS   Disclosure; Fig 4B; 97pp; English.
XX
CC   The invention relates to a method for producing animal food products with
CC   increased ribs content. The method comprises: (a) introducing a transgene
CC   which interferes with expression of growth differentiation factor-11
CC   (GDF-11), into an embryo; (b) allowing the embryo to mature; (c) cross-
CC   breeding the transgene-positive progeny; (d) processing these progeny to
CC   obtain the foodstuff. Modulators of GDF-11 are useful for treating acute
CC   or chronic renal disease, and various other muscle associated disorders
CC   e.g cancer, AIDS; cell proliferative disorders, neurodegenerative
CC   disorders; adipose tissue disorders and immunologic disorders. The animal
CC   food product comprises large amounts of muscle and meagre amounts of fats
CC   and cholesterol, hence useful in treating obesity and related disorders.
CC   The present sequence represents a mouse myostatin polypeptide, used for
CC   comparison studies.
XX
SQ   Sequence   376 AA;

  Query Match             100.0%;  Score 118;  DB 21;  Length 376;
  Best Local Similarity   100.0%;  Pred. No. 1.3e-10;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db     316 FVFLQKYPHTHLVHQANPRGS 336


RESULT 83
AAB73186
ID   AAB73186 standard; Protein; 376 AA.
XX
AC   AAB73186;
XX
DT   11-MAY-2001  (first entry)
XX
DE   Murine GDF-8 #2.
XX
KW   Gene therapy; growth differentiation factor-8; GDF-8; AIDS; cachexia;
KW   neurodegenerative disease; amyotrophic lateral sclerosis; obesity;
KW   muscular dystrophy; musculodegenerative disease; tissue repair;
KW   muscle wasting disease; neuromuscular disorder; spinal cord injury;
KW   traumatic injury; congestive obstructive pulmonary disease.
XX
OS   Mus sp.
XX
PN   WO200112777-A2.
XX
PD   22-FEB-2001.
XX
PF   17-AUG-2000; 2000WO-US22884.
XX
PR   19-AUG-1999;   99US-0378238.
XX
PA   (UYJO ) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI   Lee S,  McPherron AC;
XX
DR   WPI; 2001-211209/21.
DR   N-PSDB; AAF63549.
XX
PT   New substantially purified growth differentiation factor-8 polypeptide,
PT   useful for treating muscle wasting disease, obesity, muscular
PT   dystrophy, neuromuscular disorder, acquired immunodeficiency syndrome
PT   and cachexia  -
XX
PS   Claim 21; Fig 5; 124pp; English.
XX
CC   The present invention relates to growth differentiation factor-8 (GDF-8)
CC   coding sequences and proteins. The present sequence is a GDF-8 protein,
CC   which was isolated in the present invention. GDF-8 is useful for treating
CC   neurodegenerative diseases (e.g. amyotrophic lateral sclerosis and
CC   muscular dystrophy), musculodegenerative diseases or in tissue repair due
CC   to trauma, obesity and disorders related to abnormal proliferation of
CC   adipocytes. GDF-8 is also useful for treating malignancies of the various
CC   organ systems, particularly cells in muscle or adipose tissues and in
CC   gene therapy for the treatment of cell proliferative or immunological
CC   diseases mediated by GDF-8. In addition, GDF-8 is also useful for
CC   treating muscle wasting disease, neuromuscular disorder, spinal cord
CC   injury, traumatic injury, congestive obstructive pulmonary disease
CC   (COPD), AIDS or cachexia.
XX
SQ   Sequence   376 AA;

  Query Match             100.0%;  Score 118;  DB 22;  Length 376;
  Best Local Similarity   100.0%;  Pred. No. 1.3e-10;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db     316 FVFLQKYPHTHLVHQANPRGS 336


RESULT 84
AAB20134
ID   AAB20134 standard; Protein; 376 AA.
XX
AC   AAB20134;
XX
DT   30-APR-2001  (first entry)
XX
DE   Mouse growth differentiation factor 8.
XX
KW   Growth differentiation factor 8; GDF-8; myostatin; down-regulation;
KW   vaccine; muscle; meat; cachexia; cardiant; mouse.
XX
OS   Mus musculus.
XX
PN   WO200105820-A2.
XX
PD   25-JAN-2001.
XX
PF   20-JUL-2000; 2000WO-DK00413.
XX
PR   20-JUL-1999;   99DK-0001014.
PR   26-JUL-1999;   99US-0145275.
XX
PA   (MEBI-) M & E BIOTECH AS.
XX
PI   Halkier T,  Mouritsen S,  Klysner S;
XX
DR   WPI; 2001-112680/12.
XX
PT   Increasing the muscle mass of animals used in meat production by down
PT   regulating growth differentiation factor 8 (GDF-8) activity in the
PT   animal through induction of anti-GDF-8 antibody production  -
XX
PS   Example 1; Page 80-81; 110pp; English.
XX
CC   The present sequence is that of mouse growth differentiation factor
CC   8 (GDF-8), also called myostatin.  It is an object of the invention
CC   to produce a recombinant therapeutic vaccine capable of effecting
CC   down-regulation of GDF-8 in order to increase the muscle growth
CC   rate of farm animals.  Variants of GDF-8 (see AAB20145-53) are
CC   provided that are capable of breaking autotolerance against
CC   autologous GDF-8.  These comprise a C-terminal portion of human
CC   GDF-8 in which a portion of the native sequence is replaced by a
CC   T-cell epitope such as the promiscuous tetanus toxin T-cell epitope
CC   P2 or P30.  Nucleic acids encoding the GDF-8 variants can be used
CC   for genetic immunisation of the animals.  Down-regulation of GDF-8
CC   activity is used to increase muscle mass by up to at least 45%
CC   in cattle, pigs and poultry used for meat production, reducing the
CC   need for antibiotic feed-additives.  Anti-GDF8 vaccines can be used
CC   to treat human diseases such as cancer cachexia where muscle atrophy
CC   is pronounced and for patients suffering from acute and chronic
CC   heart failure.
```

```
XX
SQ   Sequence   376 AA;

  Query Match             100.0%;  Score 118;  DB 22;  Length 376;
  Best Local Similarity   100.0%;  Pred. No. 1.3e-10;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db     316 FVFLQKYPHTHLVHQANPRGS 336


RESULT 85
AAB20137
ID   AAB20137 standard; Protein; 376 AA.
XX
AC   AAB20137;
XX
DT   30-APR-2001  (first entry)
XX
DE   Rat growth differentiation factor 8.
XX
KW   Growth differentiation factor 8; GDF-8; myostatin; down-regulation;
KW   vaccine; muscle; meat; cachexia; cardiant; rat.
XX
OS   Rattus norvegicus.
XX
PN   WO200105820-A2.
XX
PD   25-JAN-2001.
XX
PF   20-JUL-2000; 2000WO-DK00413.
XX
PR   20-JUL-1999;   99DK-0001014.
PR   26-JUL-1999;   99US-0145275.
XX
PA   (MEBI-) M & E BIOTECH AS.
XX
PI   Halkier T,  Mouritsen S,  Klysner S;
XX
DR   WPI; 2001-112680/12.
XX
PT   Increasing the muscle mass of animals used in meat production by down
PT   regulating growth differentiation factor 8 (GDF-8) activity in the
PT   animal through induction of anti-GDF-8 antibody production  -
XX
PS   Example 1; Page 86-87; 110pp; English.
XX
CC   The present sequence is that of rat growth differentiation factor
CC   8 (GDF-8), also called myostatin.  It is an object of the invention
CC   to produce a recombinant therapeutic vaccine capable of effecting
CC   down-regulation of GDF-8 in order to increase the muscle growth
CC   rate of farm animals.  Variants of GDF-8 (see AAB20145-53) are
CC   provided that are capable of breaking autotolerance against
CC   autologous GDF-8.  These comprise a C-terminal portion of human
CC   GDF-8 in which a portion of the native sequence is replaced by a
CC   T-cell epitope such as the promiscuous tetanus toxin T-cell epitope
CC   P2 or P30.  Nucleic acids encoding the GDF-8 variants can be used
CC   for genetic immunisation of the animals.  Down-regulation of GDF-8
CC   activity is used to increase muscle mass by up to at least 45%
CC   in cattle, pigs and poultry used for meat production, reducing the
CC   need for antibiotic feed-additives.  Anti-GDF8 vaccines can be used
CC   to treat human diseases such as cancer cachexia where muscle atrophy
CC   is pronounced and for patients suffering from acute and chronic
CC   heart failure.
XX
SQ   Sequence   376 AA;

  Query Match             100.0%;  Score 118;  DB 22;  Length 376;
  Best Local Similarity   100.0%;  Pred. No. 1.3e-10;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db     316 FVFLQKYPHTHLVHQANPRGS 336


RESULT 86
AAE18660
ID   AAE18660 standard; Protein; 376 AA.
XX
AC   AAE18660;
XX
DT   17-MAY-2002  (first entry)
XX
DE   Murine promyostatin.
XX
KW   Murine; promyostatin; myostatin; therapy; amyotrophic lateral sclerosis;
KW   neurodegenerative disease; GDF-11; muscular dystrophy; type II diabetes;
KW   muscle growth; myostatin prodomain; signal transduction; atherosclerosis;
KW   obesity; cachexia; hypertension; myocardial infarction; neuroprotective;
KW   muscular dystrophy; muscle wasting disorder; neuromuscular disorder;
KW   anorexia; growth differentiation factor; anorectic; immunomodulator;
KW   cardiant; metabolic.
XX
OS   Mus musculus.
XX
FH   Key             Location/Qualifiers
FT   Domain          20..263
FT                   /note= "Myostatin prodomain; This region is specifically
FT                   claimed in claim 12 of the specification"
FT   Region          268..375
FT                   /note= "Mature myostatin; This region is specifically
FT                   claimed in claim 17 of the specification"
XX
PN   WO200209641-A2.
XX
PD   07-FEB-2002.
XX
PF   26-JUL-2001; 2001WO-US23510.
XX
PR   27-JUL-2000; 2000US-0628112.
XX
PA   (UYJO ) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI   Lee S,  Mcpherron AC;
XX
DR   WPI; 2002-179989/23.
DR   N-PSDB; AAD29743.
XX
PT   Novel substantially purified promyostatin polypeptide portion
PT   (myostatin prodomain or mature myostatin peptide), useful as myostatin
PT   signal transduction modulator in muscle cell or adipose tissue, for
PT   treating obesity  -
XX
PS   Claim 3; Page 147; 175pp; English.
XX
CC   The present invention relates to a purified promyostatin polypeptide
CC   portion. A myostatin peptide is useful as a target for treatment of
CC   neurodegenerative diseases such as amyotrophic lateral sclerosis or
CC   muscular dystrophy. A myostatin prodomain inhibits myostatin signal
CC   transduction, while mature myostatin peptide referred as myostatin is
CC   useful for inducing myostatin signal transduction by interacting
CC   specifically with myostatin receptor expressed on the surface of the
CC   cell. Modulating myostatin signal transduction is useful for regulating
CC   skeletal muscle mass, where promyostatin portion is a negative regulator
CC   or muscle growth. Modulating myostatin signal transduction in a muscle
CC   cell or adipose tissue is useful for treating pathological conditions
CC   associated with myostatin such as obesity and type II diabetes, cachexia,
CC   conditions associated with obesity, e.g. atherosclerosis, hypertension,
CC   myocardial infarction, muscle wasting disorders such as muscular
CC   dystrophy, neuromuscular disorders, or anorexia. Myostatin prodomain is
CC   useful for modulating the growth of muscle or adipose tissue in an
CC   organism. Myostatin prodomain is useful for increasing muscle mass or
CC   reducing fat content of an organism which is useful as a food source, and
CC   myostatin peptide is useful for decreasing the growth of muscle tissue in
```

CC an organism e.g. an organism detrimental to an environment. Mutant
CC promyostatin which has dominant negative activity with respect to
CC myostatin or growth differentiation factor (GDF)-11 is useful for
CC reducing or inhibiting myostatin signal transduction. The present
CC sequence is murine promyostatin.
XX
SQ Sequence 376 AA;

Query Match 100.0%; Score 118; DB 23; Length 376;
Best Local Similarity 100.0%; Pred. No. 1.3e-10;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FVFLQKYPHTHLVHQANPRGS 21
||||||||||||||||||||||
Db 316 FVFLQKYPHTHLVHQANPRGS 336

RESULT 87
AAE18661
ID AAE18661 standard; Protein; 376 AA.
XX
AC AAE18661;
XX
DT 17-MAY-2002 (first entry)
XX
DE Rat promyostatin.
XX
KW Rat; promyostatin; myostatin; therapy; amyotrophic lateral sclerosis;
KW neurodegenerative disease; GDF-11; muscular dystrophy; type II diabetes;
KW muscle growth; myostatin prodomain; signal transduction; atherosclerosis;
KW obesity; cachexia; hypertension; myocardial infarction; neuroprotective;
KW muscular dystrophy; muscle wasting disorder; neuromuscular disorder;
KW anorexia; growth differentiation factor; anorectic; immunomodulator;
KW cardiant; metabolic.
XX
OS Rattus norvegicus.
XX
FH Key Location/Qualifiers
FT Domain 20..263
FT /note= "Myostatin prodomain; This region is specifically
FT claimed in claim 12 of the specification"
FT Region 268..375
FT /note= "Mature myostatin; This region is specifically
FT claimed in claim 17 of the specification"
XX
PN WO200209641-A2.
XX
PD 07-FEB-2002.
XX
PF 26-JUL-2001; 2001WO-US23510.
XX
PR 27-JUL-2000; 2000US-0628112.
XX
PA (UYJO) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI Lee S, Mcpherron AC;
XX
DR WPI; 2002-179989/23.
DR N-PSDB; AAD29744.
XX
PT Novel substantially purified promyostatin polypeptide portion
PT (myostatin prodomain or mature myostatin peptide), useful as myostatin
PT signal transduction modulator in muscle cell or adipose tissue, for
PT treating obesity -
XX
PS Claim 4; Page 149-150; 175pp; English.
XX
CC The present invention relates to a purified promyostatin polypeptide
CC portion. A myostatin peptide is useful as a target for treatment of
CC neurodegenerative diseases such as amyotrophic lateral sclerosis or
CC muscular dystrophy. A myostatin prodomain inhibits myostatin signal
CC transduction, while mature myostatin peptide referred as myostatin is
CC useful for inducing myostatin signal transduction by interacting
CC specifically with myostatin receptor expressed on the surface of the
CC cell. Modulating myostatin signal transduction is useful for regulating
CC skeletal muscle mass, where promyostatin portion is a negative regulator
CC or muscle growth. Modulating myostatin signal transduction in a muscle
CC cell or adipose tissue is useful for treating pathological conditions
CC associated with myostatin such as obesity and type II diabetes, cachexia,
CC conditions associated with obesity, e.g. atherosclerosis, hypertension,
CC myocardial infarction, muscle wasting disorders such as muscular
CC dystrophy, neuromuscular disorders, or anorexia. Myostatin prodomain is
CC useful for modulating the growth of muscle or adipose tissue in an
CC organism. Myostatin prodomain is useful for increasing muscle mass or
CC reducing fat content of an organism which is useful as a food source, and
CC myostatin peptide is useful for decreasing the growth of muscle tissue in
CC an organism e.g. an organism detrimental to an environment. Mutant
CC promyostatin which has dominant negative activity with respect to
CC myostatin or growth differentiation factor (GDF)-11 is useful for
CC reducing or inhibiting myostatin signal transduction. The present
CC sequence is rat promyostatin.
XX
SQ Sequence 376 AA;

Query Match 100.0%; Score 118; DB 23; Length 376;
Best Local Similarity 100.0%; Pred. No. 1.3e-10;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FVFLQKYPHTHLVHQANPRGS 21
||||||||||||||||||||||
Db 316 FVFLQKYPHTHLVHQANPRGS 336

RESULT 88
AAU75621
ID AAU75621 standard; Protein; 376 AA.
XX
AC AAU75621;
XX
DT 21-MAY-2002 (first entry)
XX
DE Mouse promyostatin.
XX
KW Mouse; promyostatin; immunomodulator; antidepressant; anorectic;
KW neuroprotective; antidiabetic; growth differentiation factor receptor;
KW myostatin receptor; GDF; muscle tissue; adipose tissue; cachexia;
KW wasting disorder; anorexia; muscular dystrophy; neuromuscular disease;
KW metabolic disorder; obesity; type II diabetes.
XX
OS Mus musculus.
XX
PN WO200210214-A2.
XX
PD 07-FEB-2002.
XX
PF 26-JUL-2001; 2001WO-US23615.
XX
PR 27-JUL-2000; 2000US-0626896.
XX
PA (UYJO) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI Lee S, McPherron AC;
XX
DR WPI; 2002-217116/27.
DR N-PSDB; ABK15394.
XX
PT New growth differentiation factor (GDF) receptors and modulators,
PT useful for ameliorating wasting disorders such as cachexia, muscular
PT dystrophy or neuromuscular disease or a metabolic disorder such as
PT obesity or type II diabetes -
XX
PS Claim 22; Fig 1; 184pp; English.
XX
CC The invention relates to a substantially purified growth differentiation
CC factor (GDF) receptor, specifically a myostatin receptor, or its
CC functional peptide portion. Also described is a method of modulating an

CC effect of myostatin on a cell by contacting the cell with an agent that
CC affects myostatin signal transduction in the cell. The method and the
CC receptor are useful for ameliorating the severity of a pathological
CC condition characterised by an abnormal amount, development or metabolic
CC activity of muscle or adipose tissue in a subject, particularly a wasting
CC disorder (e.g. cachexia, anorexia, muscular dystrophy or neuromuscular
CC disease) or a metabolic disorder (e.g. obesity or type II diabetes). The
CC present sequence represents the amino acid sequence of mouse
CC promyostatin.
XX
SQ Sequence 376 AA;

Query Match 100.0%; Score 118; DB 23; Length 376;
Best Local Similarity 100.0%; Pred. No. 1.3e-10;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FVFLQKYPHTHLVHQANPRGS 21
||||||||||||||||||||
Db 316 FVFLQKYPHTHLVHQANPRGS 336

RESULT 89
AAU75622
ID AAU75622 standard; Protein; 376 AA.
XX
AC AAU75622;
XX
DT 21-MAY-2002 (first entry)
XX
DE Rat promyostatin.
XX
KW Rat; promyostatin; immunomodulator; antidepressant; anorectic;
KW neuroprotective; antidiabetic; growth differentiation factor receptor;
KW myostatin receptor; GDF; muscle tissue; adipose tissue; cachexia;
KW wasting disorder; anorexia; muscular dystrophy; neuromuscular disease;
KW metabolic disorder; obesity; type II diabetes.
XX
OS Rattus norvegicus.
XX
PN WO200210214-A2.
XX
PD 07-FEB-2002.
XX
PF 26-JUL-2001; 2001WO-US23615.
XX
PR 27-JUL-2000; 2000US-0626896.
XX
PA (UYJO) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI Lee S, McPherron AC;
XX
DR WPI; 2002-217116/27.
DR N-PSDB; ABK15395.
XX
PT New growth differentiation factor (GDF) receptors and modulators,
PT useful for ameliorating wasting disorders such as cachexia, muscular
PT dystrophy or neuromuscular disease or a metabolic disorder such as
PT obesity or type II diabetes -
XX
PS Claim 22; Fig 1; 184pp; English.
XX
CC The invention relates to a substantially purified growth differentiation
CC factor (GDF) receptor, specifically a myostatin receptor, or its
CC functional peptide portion. Also described is a method of modulating an
CC effect of myostatin on a cell by contacting the cell with an agent that
CC affects myostatin signal transduction in the cell. The method and the
CC receptor are useful for ameliorating the severity of a pathological
CC condition characterised by an abnormal amount, development or metabolic
CC activity of muscle or adipose tissue in a subject, particularly a wasting
CC disorder (e.g. cachexia, anorexia, muscular dystrophy or neuromuscular
CC disease) or a metabolic disorder (e.g. obesity or type II diabetes). The
CC present sequence represents the amino acid sequence of rat
CC promyostatin.
XX
SQ Sequence 376 AA;

Query Match 100.0%; Score 118; DB 23; Length 376;
Best Local Similarity 100.0%; Pred. No. 1.3e-10;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FVFLQKYPHTHLVHQANPRGS 21
||||||||||||||||||||
Db 316 FVFLQKYPHTHLVHQANPRGS 336

RESULT 90
AAW69892
ID AAW69892 standard; Protein; 375 AA.
XX
AC AAW69892;
XX
DT 07-DEC-1998 (first entry)
XX
DE Ovine growth differentiation factor-8.
XX
KW Growth differentiation factor-8; GDF-8; sheep; transgenic animal;
KW transforming growth factor-beta; muscle; meat; inhibitor; obesity;
KW neuromuscular disease; muscular dystrophy; cachexia; AIDS; cancer;
KW therapy.
XX
OS Ovis aries.
XX
FH Key Location/Qualifiers
FT Cleavage-site 263..266
FT Protein 267..375
FT /label= Mat_protein
XX
PN WO9833887-A1.
XX
PD 06-AUG-1998.
XX
PF 05-FEB-1998; 98WO-US02479.
XX
PR 23-MAY-1997; 97US-0862445.
PR 05-FEB-1997; 97US-0795071.
PR 28-APR-1997; 97US-0847910.
XX
PA (UYJO) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI Lee S, McPherron AC;
XX
DR WPI; 1998-437444/37.
DR N-PSDB; AAV45823.
XX
PT Transgenic animals with gene for growth differentiation factor-8
PT disrupted - have increased muscle and reduced cholesterol contents,
PT also use of GDF-8 inhibitors for treating cancer, obesity,
PT neuromuscular disease
XX
PS Example 9; Fig 14f; 125pp; English.
XX
CC This is the amino acid sequence of sheep growth differentiation
CC factor-8 (GDF-8), a novel member of the transforming growth factor-
CC beta superfamily that appears to relate to various cell
CC proliferative disorders, especially those involving muscle, nerve
CC and adipose tissue. The sequence was deduced from a cDNA clone
CC (see AAV45823) isolated from a skeletal muscle cDNA library. The
CC invention provides novel mammalian and avian GDF-8 proteins (see
CC AAW69883-92). A transgenic non-human animal is claimed in which
CC GDF-8 expression is disrupted or interfered with. Also claimed
CC are: (1) chicken or turkey eggs or meat, beef, milk, pork and lamb
CC from these animals; (2) method for increasing muscle mass in
CC animals by administering an antibody (Ab) that binds to GDF-8; (3)
CC inhibiting the action of GDF-8 by treating foetal or adult muscle
CC or progenitor cells with a GDF-8 inhibitor; (4) isolated nucleic
CC acid encoding a GDF-8 protein truncated by loss of the C-terminal

CC active fragment. The transgenic animals have increased muscle mass
CC and for poultry reduced cholesterol contents. Method (3) is used
CC to treat muscle wasting or neuromuscular diseases, muscular atrophy
CC and aging, particularly muscular dystrophy, spinal cord or
CC traumatic injuries, congestive or obstructive lung disease, AIDS
CC and cachexia. Method (4) is used to treat cancer of muscle,
CC connective tissue and bone, or obesity. Also (not claimed) GDF-8
CC can be used to maintain myoblasts intended for transplanting or to
CC improve efficiency of fusion. Ab can be used to detect and
CC quantify GDF-8 (particularly in muscle, for diagnosis or monitoring),
CC also for immunotherapy and in vivo imaging.
XX
SQ Sequence 375 AA;

Query Match 94.9%; Score 112; DB 19; Length 375;
Best Local Similarity 90.5%; Pred. No. 1.2e-09;
Matches 19; Conservative 2; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FVFLQKYPHTHLVHQANPRGS 21
|:||||||||||||||||:||
Db 315 FLFLQKYPHTHLVHQANPKGS 335

RESULT 91
AAY33845
ID AAY33845 standard; Protein; 375 AA.
XX
AC AAY33845;
XX
DT 08-DEC-1999 (first entry)
XX
DE Amino acid sequence of Ovine Growth Differentiation Factor-8.
XX
KW growth differentiation factor; tissue growth; muscle growth;
KW cell differentiation; animal feed; muscle disorder;
KW bone degeneration; nerve degeneration; GDF-8; development;
KW transforming growth factor beta; TGF-beta.
XX
OS Ovis aries.
XX
PN WO9940181-A1.
XX
PD 12-AUG-1999.
XX
PF 05-FEB-1999; 99WO-US02511.
XX
PR 28-JUL-1998; 98US-0124180.
PR 05-FEB-1998; 98US-0019070.
XX
PA (UYJO) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI Lee S, McPherron AC;
XX
DR WPI; 1999-494289/41.
DR N-PSDB; AAZ06459.
XX
PT New differentiation factor useful for treating neurodegenerative
PT diseases
XX
PS Example 9; Fig 14g; 138pp; English.
XX
CC This is the amino acid sequence of the Ovine Growth
CC Differentiation Factor-8 (GDF-8). Skeletal muscle cDNA libraries from
CC this species were screened with the murine GDF-8 probe, in order to
CC isolate the GDF-8. The absolute conservation of the C-terminal region
CC between species as evolutionary far apart as humans and chickens,
CC baboons and turkeys, suggests that this region will be highly conserved
CC in many other species as well.
CC GDF-8 has been shown to result in increased bone and muscle mass (such
CC as ribs) when expressed in reduced amounts. GDF-8 minus transgenic
CC animals and forms of animal feed that can inhibit/reduce production of
CC GDF-8 are of commercial interest.
CC GDF-8 expression may also have a role in the therapy of abnormal growth
CC of muscle, bone or adipose tissue. A GDF-8 monoclonal antibody, GDF-8
CC antisense molecule or dominant negative polypeptide could be used with
CC foetal or adult muscle cells, bone cells or progenitor cells. These
CC agents can be administered to a patient suffering from a disorder such
CC as muscle wasting disease, neuro muscular disorder, muscle atrophy,
CC osteoporosis, bone degenerative diseases, obesity or other adipocyte
CC cell disorders, and aging for example.
XX
SQ Sequence 375 AA;

Query Match 94.9%; Score 112; DB 20; Length 375;
Best Local Similarity 90.5%; Pred. No. 1.2e-09;
Matches 19; Conservative 2; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FVFLQKYPHTHLVHQANPRGS 21
|:||||||||||||||||:||
Db 315 FLFLQKYPHTHLVHQANPKGS 335

RESULT 92
AAY33936
ID AAY33936 standard; peptide; 375 AA.
XX
AC AAY33936;
XX
DT 09-NOV-1999 (first entry)
XX
DE Amino acid sequence of ovine myostatin.
XX
KW Myostatin; mouse; rabbit; human; baboon; bovine; porcine; ovine; chick;
KW turkey; zebrafish; immune response; vaccine; body weight; muscle mass;
KW mammary gland tissue; lactation; feed uptake; muscle degeneration; GDF11.
XX
OS Ovis sp.
XX
PN WO9942573-A1.
XX
PD 26-AUG-1999.
XX
PF 19-FEB-1999; 99WO-CA00128.
XX
PR 19-FEB-1998; 98US-0075213.
XX
PA (BIOS-) BIOSTAR INC.
XX
PI Barker CA, Morsey M;
XX
DR WPI; 1999-527471/44.
XX
PT New myostatin peptide, multimers and immunoconjugates for eliciting
PT an immune response in a vertebrate against a myostatin immunogen
XX
PS Claim 4; Fig 1A-D; 109pp; English.
XX
CC The invention provides myostatin peptides consisting of 3-100 amino
CC acids, derived from a region of mouse, rabbit, human, baboon, bovine,
CC porcine, ovine, chick, turkey or zebrafish myostatin (see sequences
CC AAY33930-939). The myostatin peptides are derived preferably from a
CC region of amino acid residues 1-275, 25-300, 50-325 or 75-350 of the
CC above sequences. The peptides and the nucleic acids encoding the peptides
CC are useful as vaccines for eliciting an immune response in a vertebrate
CC against a myostatin immunogen. They result in increasing body weight,
CC muscle mass, number and size of muscle cells, muscle strength, mammary
CC gland tissue, lactation, appetite or feed uptake, life span of the
CC vertebrate, and cause a reduction in body fat content, useful for muscle
CC wasting conditions. The vaccines are also useful for treating a disorder
CC which comprises degeneration or wasting of muscle in a vertebrate, and
CC useful for modulating GDF11 activity. The present sequence represents
CC a ovine myostatin seqeunce.
XX
SQ Sequence 375 AA;

Query Match 94.9%; Score 112; DB 20; Length 375;

```
  Best Local Similarity   90.5%;  Pred. No. 1.2e-09;
  Matches   19;  Conservative    2;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |:||||||||||||||||:||
Db     315 FLFLQKYPHTHLVHQANPKGS 335


RESULT 93
AAW97884
ID   AAW97884 standard; Protein; 375 AA.
XX
AC   AAW97884;
XX
DT   07-JUN-1999  (first entry)
XX
DE   Bovine myostatin.
XX
KW   Myostatin; cattle; bovine; transforming growth factor beta;
KW   double muscling; muscle hyperplasia; transgenic animal.
XX
OS   Bos taurus.
XX
PN   WO9902667-A1.
XX
PD   21-JAN-1999.
XX
PF   14-JUL-1998;   98WO-IB01197.
XX
PR   15-JAN-1998;   98US-0007761.
PR   14-JUL-1997;   97US-0891789.
XX
PA   (UYLI-) UNIV LIEGE.
XX
PI   Georges M,  Grobet L,  Poncelet D;
XX
DR   WPI; 1999-120869/10.
DR   N-PSDB; AAX24415, AAX24464.
XX
PT   Increasing muscle mass in mammals  - by decreasing myostatin
PT   expression
XX
PS   Claim 19; Page 55; 75pp; English.
XX
CC   This is the amino acid sequence of bovine myostatin, a member of
CC   the transforming growth factor beta superfamily, as encoded by the
CC   wild-type gene (see AAX24415).  A mutation of this gene (see AAX24416)
CC   has been detected in cattle.  Cattle of the Belgian Blue breed
CC   homozygous for the mutant gene are double-muscled.  A new method of
CC   increasing muscle mass of a mammal having myostatin-expressing
CC   muscle cells, comprises administration of a nucleic acid molecule
CC   substantially complementary to at least a portion of mRNA
CC   encoding myostatin and of sufficient length to reduce myostatin
CC   expression and thus increase muscle mass.  A ribozyme may also be
CC   used.  Also claimed are: a method for determining muscular
CC   hyperplasia (MH) in a mammal using primers based upstream and
CC   downstream of the mutation; a diagnostic kit for determining
CC   the genotype of a sample of genetic material; a method for
CC   determining MH in a mammal; a method for determining double
CC   muscling in a bovine animal; a method for determining the myostatin
CC   genotype of an animal; purified myostatin; isolated nucleic acids;
CC   a microbial host cell; a probe based on the myostatin gene
CC   mutation; transgenic mammals having MH phenotype; a myostatin
CC   knockout animal; and a transgenic bovine having a gene encoding
CC   active myostatin, and a heterologous nucleotide sequence antisense
CC   to that gene, and optionally further containing a gene encoding a
CC   nucleic acid sequence with ribozyme activity in transcriptional
CC   association with the antisense sequence.
XX
SQ   Sequence   375 AA;

  Query Match             94.9%;  Score 112;  DB 20;  Length 375;
  Best Local Similarity   95.2%;  Pred. No. 1.2e-09;
  Matches   20;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||| |
Db     315 FVFLQKYPHTHLVHQANPRAS 335


RESULT 94
AAB20136
ID   AAB20136 standard; Protein; 375 AA.
XX
AC   AAB20136;
XX
DT   30-APR-2001  (first entry)
XX
DE   Sheep growth differentiation factor 8.
XX
KW   Growth differentiation factor 8; GDF-8; myostatin; down-regulation;
KW   vaccine; muscle; meat; cachexia; cardiant; sheep.
XX
OS   Ovis sp.
XX
PN   WO200105820-A2.
XX
PD   25-JAN-2001.
XX
PF   20-JUL-2000; 2000WO-DK00413.
XX
PR   20-JUL-1999;   99DK-0001014.
PR   26-JUL-1999;   99US-0145275.
XX
PA   (MEBI-) M & E BIOTECH AS.
XX
PI   Halkier T,  Mouritsen S,  Klysner S;
XX
DR   WPI; 2001-112680/12.
XX
PT   Increasing the muscle mass of animals used in meat production by down
PT   regulating growth differentiation factor 8 (GDF-8) activity in the
PT   animal through induction of anti-GDF-8 antibody production  -
XX
PS   Example 1; Page 84-85; 110pp; English.
XX
CC   The present sequence is that of sheep growth differentiation factor
CC   8 (GDF-8), also called myostatin.  It is an object of the invention
CC   to produce a recombinant therapeutic vaccine capable of effecting
CC   down-regulation of GDF-8 in order to increase the muscle growth
CC   rate of farm animals.  Variants of GDF-8 (see AAB20145-53) are
CC   provided that are capable of breaking autotolerance against
CC   autologous GDF-8.  These comprise a C-terminal portion of human
CC   GDF-8 in which a portion of the native sequence is replaced by a
CC   T-cell epitope such as the promiscuous tetanus toxin T-cell epitope
CC   P2 or P30.  Nucleic acids encoding the GDF-8 variants can be used
CC   for genetic immunisation of the animals.  Down-regulation of GDF-8
CC   activity is used to increase muscle mass by up to at least 45%
CC   in cattle, pigs and poultry used for meat production, reducing the
CC   need for antibiotic feed-additives.  Anti-GDF8 vaccines can be used
CC   to treat human diseases such as cancer cachexia where muscle atrophy
CC   is pronounced and for patients suffering from acute and chronic
CC   heart failure.
XX
SQ   Sequence   375 AA;

  Query Match             94.9%;  Score 112;  DB 22;  Length 375;
  Best Local Similarity   90.5%;  Pred. No. 1.2e-09;
  Matches   19;  Conservative    2;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |:||||||||||||||||:||
Db     315 FLFLQKYPHTHLVHQANPKGS 335


RESULT 95
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```
AAE18666
ID   AAE18666 standard; Protein; 375 AA.
XX
AC   AAE18666;
XX
DT   17-MAY-2002  (first entry)
XX
DE   Ovine promyostatin.
XX
KW   Ovine; promyostatin; myostatin; therapy; amyotrophic lateral sclerosis;
KW   neurodegenerative disease; GDF-11; muscular dystrophy; type II diabetes;
KW   muscle growth; myostatin prodomain; signal transduction; atherosclerosis;
KW   obesity; cachexia; hypertension; myocardial infarction; neuroprotective;
KW   muscular dystrophy; muscle wasting disorder; neuromuscular disorder;
KW   anorexia; growth differentiation factor; anorectic; immunomodulator;
KW   cardiant; metabolic.
XX
OS   Ovis sp.
XX
FH   Key             Location/Qualifiers
FT   Domain          20..262
FT                   /note= "Myostatin prodomain; This region is specifically
FT                   claimed in claim 12 of the specification"
FT   Region          267..374
FT                   /note= "Mature myostatin; This region is specifically
FT                   claimed in claim 17 of the specification"
XX
PN   WO200209641-A2.
XX
PD   07-FEB-2002.
XX
PF   26-JUL-2001; 2001WO-US23510.
XX
PR   27-JUL-2000; 2000US-0628112.
XX
PA   (UYJO ) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI   Lee S,  Mcpherron AC;
XX
DR   WPI; 2002-179989/23.
DR   N-PSDB; AAD29749.
XX
PT   Novel substantially purified promyostatin polypeptide portion
PT   (myostatin prodomain or mature myostatin peptide), useful as myostatin
PT   signal transduction modulator in muscle cell or adipose tissue, for
PT   treating obesity  -
XX
PS   Claim 5; Page 163-164; 175pp; English.
XX
CC   The present invention relates to a purified promyostatin polypeptide
CC   portion. A myostatin peptide is useful as a target for treatment of
CC   neurodegenerative diseases such as amyotrophic lateral sclerosis or
CC   muscular dystrophy. A myostatin prodomain inhibits myostatin signal
CC   transduction, while mature myostatin peptide referred as myostatin is
CC   useful for inducing myostatin signal transduction by interacting
CC   specifically with myostatin receptor expressed on the surface of the
CC   cell. Modulating myostatin signal transduction is useful for regulating
CC   skeletal muscle mass, where promyostatin portion is a negative regulator
CC   or muscle growth. Modulating myostatin signal transduction in a muscle
CC   cell or adipose tissue is useful for treating pathological conditions
CC   associated with myostatin such as obesity and type II diabetes, cachexia,
CC   conditions associated with obesity, e.g. atherosclerosis, hypertension,
CC   myocardial infarction, muscle wasting disorders such as muscular
CC   dystrophy, neuromuscular disorders, or anorexia. Myostatin prodomain is
CC   useful for modulating the growth of muscle or adipose tissue in an
CC   organism. Myostatin prodomain is useful for increasing muscle mass or
CC   reducing fat content of an organism which is useful as a food source, and
CC   myostatin peptide is useful for decreasing the growth of muscle tissue in
CC   an organism e.g. an organism detrimental to an environment. Mutant
CC   promyostatin which has dominant negative activity with respect to
CC   myostatin or growth differentiation factor (GDF)-11 is useful for
CC   reducing or inhibiting myostatin signal transduction. The present
CC   sequence is ovine promyostatin.
XX
SQ   Sequence   375 AA;

  Query Match             94.9%;  Score 112;  DB 23;  Length 375;
  Best Local Similarity   90.5%;  Pred. No. 1.2e-09;
  Matches   19;  Conservative    2;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |:||||||||||||||||:||
Db     315 FLFLQKYPHTHLVHQANPKGS 335


RESULT 96
AAU75627
ID   AAU75627 standard; Protein; 375 AA.
XX
AC   AAU75627;
XX
DT   21-MAY-2002  (first entry)
XX
DE   Ovine promyostatin.
XX
KW   Sheep; promyostatin; immunomodulator; antidepressant; anorectic;
KW   neuroprotective; antidiabetic; growth differentiation factor receptor;
KW   myostatin receptor; GDF; muscle tissue; adipose tissue; cachexia;
KW   wasting disorder; anorexia; muscular dystrophy; neuromuscular disease;
KW   metabolic disorder; obesity; type II diabetes.
XX
OS   Ovis sp.
XX
PN   WO200210214-A2.
XX
PD   07-FEB-2002.
XX
PF   26-JUL-2001; 2001WO-US23615.
XX
PR   27-JUL-2000; 2000US-0626896.
XX
PA   (UYJO ) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI   Lee S,  McPherron AC;
XX
DR   WPI; 2002-217116/27.
DR   N-PSDB; ABK15400.
XX
PT   New growth differentiation factor (GDF) receptors and modulators,
PT   useful for ameliorating wasting disorders such as cachexia, muscular
PT   dystrophy or neuromuscular disease or a metabolic disorder such as
PT   obesity or type II diabetes -
XX
PS   Claim 22; Fig 1; 184pp; English.
XX
CC   The invention relates to a substantially purified growth differentiation
CC   factor (GDF) receptor, specifically a myostatin receptor, or its
CC   functional peptide portion. Also described is a method of modulating an
CC   effect of myostatin on a cell by contacting the cell with an agent that
CC   affects myostatin signal transduction in the cell. The method and the
CC   receptor are useful for ameliorating the severity of a pathological
CC   condition characterised by an abnormal amount, development or metabolic
CC   activity of muscle or adipose tissue in a subject, particularly a wasting
CC   disorder (e.g. cachexia, anorexia, muscular dystrophy or neuromuscular
CC   disease) or a metabolic disorder (e.g. obesity or type II diabetes). The
CC   present sequence represents the amino acid sequence of ovine
CC   promyostatin.
XX
SQ   Sequence   375 AA;

  Query Match             94.9%;  Score 112;  DB 23;  Length 375;
  Best Local Similarity   90.5%;  Pred. No. 1.2e-09;
  Matches   19;  Conservative    2;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |:||||||||||||||||:||
```

```
Db    315 FLFLQKYPHTHLVHQANPKGS 335


RESULT 97
AAY33922
ID   AAY33922 standard; peptide; 24 AA.
XX
AC   AAY33922;
XX
DT   09-NOV-1999  (first entry)
XX
DE   Myostatin peptide MYOS 9.
XX
KW   Myostatin; mouse; rabbit; human; baboon; bovine; porcine; ovine; chick;
KW   turkey; zebrafish; immune response; vaccine; body weight; muscle mass;
KW   mammary gland tissue; lactation; feed uptake; muscle degeneration;
KW   GDF11 activity; MYOS 9.
XX
OS   Bos sp.
XX
PN   WO9942573-A1.
XX
PD   26-AUG-1999.
XX
PF   19-FEB-1999;   99WO-CA00128.
XX
PR   19-FEB-1998;   98US-0075213.
XX
PA   (BIOS-) BIOSTAR INC.
XX
PI   Barker CA,  Morsey M;
XX
DR   WPI; 1999-527471/44.
DR   N-PSDB; AAX99354.
XX
PT   New myostatin peptide, multimers and immunoconjugates for eliciting
PT   an immune response in a vertebrate against a myostatin immunogen
XX
PS   Claim 7; Fig 6; 109pp; English.
XX
CC   The invention provides myostatin peptides consisting of 3-100 amino
CC   acids, derived from a region of mouse, rabbit, human, baboon, bovine,
CC   porcine, ovine, chick, turkey or zebrafish myostatin (see sequences
CC   AAY33930-939). The myostatin peptides are derived preferably from a
CC   region of amino acid residues 1-275, 25-300, 50-325 or 75-350 of the
CC   above sequences. The peptides and the nucleic acids encoding the peptides
CC   are useful as vaccines for eliciting an immune response in a vertebrate
CC   against a myostatin immunogen. They result in increasing body weight,
CC   muscle mass, number and size of muscle cells, muscle strength, mammary
CC   gland tissue, lactation, appetite or feed uptake, life span of the
CC   vertebrate, and cause a reduction in body fat content, useful for muscle
CC   wasting conditions. The vaccines are also useful for treating a disorder
CC   which comprises degeneration or wasting of muscle in a vertebrate, and
CC   useful for modulating GDF11 activity. Sequences AAY33918-927 represent
CC   myostatin peptides MYOS 1, 3, 5, 7, 9, 11, 13, 15, 17 and 19. These
CC   peptides are encoded by synthetic DNA fragments (AAX99350-359)
CC   synthesised based on the bovine myostatin sequence.
XX
SQ   Sequence   24 AA;

  Query Match             93.2%;  Score 110;  DB 20;  Length 24;
  Best Local Similarity   95.2%;  Pred. No. 1.1e-10;
  Matches   20;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||| |
Db       4 FVFLQKYPHTHLVHQANPRRS 24


RESULT 98
AAY33928
ID   AAY33928 standard; Protein; 124 AA.
XX
AC   AAY33928;
XX
DT   09-NOV-1999  (first entry)
XX
DE   Reconstructed myostatin active region.
XX
KW   Myostatin; mouse; rabbit; human; baboon; bovine; porcine; ovine; chick;
KW   turkey; zebrafish; immune response; vaccine; body weight; muscle mass;
KW   mammary gland tissue; lactation; feed uptake; muscle degeneration;
KW   GDF11 activity.
XX
OS   Synthetic.
OS   Bos sp.
XX
FH   Key             Location/Qualifiers
FT   Peptide         19..20
FT                   /note= "linker peptide"
FT   Peptide         47..48
FT                   /note= "linker peptide"
FT   Peptide         81..82
FT                   /note= "linker peptide"
XX
PN   WO9942573-A1.
XX
PD   26-AUG-1999.
XX
PF   19-FEB-1999;   99WO-CA00128.
XX
PR   19-FEB-1998;   98US-0075213.
XX
PA   (BIOS-) BIOSTAR INC.
XX
PI   Barker CA,  Morsey M;
XX
DR   WPI; 1999-527471/44.
DR   N-PSDB; AAX99360.
XX
PT   New myostatin peptide, multimers and immunoconjugates for eliciting
PT   an immune response in a vertebrate against a myostatin immunogen
XX
PS   Example 3; Fig 13; 109pp; English.
XX
CC   The invention provides myostatin peptides consisting of 3-100 amino
CC   acids, derived from a region of mouse, rabbit, human, baboon, bovine,
CC   porcine, ovine, chick, turkey or zebrafish myostatin (see sequences
CC   AAY33930-939). The myostatin peptides are derived preferably from a
CC   region of amino acid residues 1-275, 25-300, 50-325 or 75-350 of the
CC   above sequences. The peptides and the nucleic acids encoding the peptides
CC   are useful as vaccines for eliciting an immune response in a vertebrate
CC   against a myostatin immunogen. They result in increasing body weight,
CC   muscle mass, number and size of muscle cells, muscle strength, mammary
CC   gland tissue, lactation, appetite or feed uptake, life span of the
CC   vertebrate, and cause a reduction in body fat content, useful for muscle
CC   wasting conditions. The vaccines are also useful for treating a disorder
CC   which comprises degeneration or wasting of muscle in a vertebrate, and
CC   useful for modulating GDF11 activity. The present sequence represents a
CC   reconstructed myostatin active region containing three sets of two amino
CC   acid linkers (Arg-Ser).
XX
SQ   Sequence   124 AA;

  Query Match             93.2%;  Score 110;  DB 20;  Length 124;
  Best Local Similarity   95.2%;  Pred. No. 7.2e-10;
  Matches   20;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||| |
Db      62 FVFLQKYPHTHLVHQANPRRS 82


RESULT 99
AAB73210
ID   AAB73210 standard; Protein; 69 AA.
```

```
XX
AC   AAB73210;
XX
DT   11-MAY-2001  (first entry)
XX
DE   Partial GDF-8.
XX
KW   Gene therapy; growth differentiation factor-8; GDF-8; AIDS; cachexia;
KW   neurodegenerative disease; amyotrophic lateral sclerosis; obesity;
KW   muscular dystrophy; musculodegenerative disease; tissue repair;
KW   muscle wasting disease; neuromuscular disorder; spinal cord injury;
KW   traumatic injury; congestive obstructive pulmonary disease.
XX
OS   Unidentified.
XX
PN   WO200112777-A2.
XX
PD   22-FEB-2001.
XX
PF   17-AUG-2000; 2000WO-US22884.
XX
PR   19-AUG-1999;   99US-0378238.
XX
PA   (UYJO ) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI   Lee S,  McPherron AC;
XX
DR   WPI; 2001-211209/21.
DR   N-PSDB; AAF63562.
XX
PT   New substantially purified growth differentiation factor-8 polypeptide,
PT   useful for treating muscle wasting disease, obesity, muscular
PT   dystrophy, neuromuscular disorder, acquired immunodeficiency syndrome
PT   and cachexia  -
XX
PS   Claim 52; Fig 18; 124pp; English.
XX
CC   The present invention relates to growth differentiation factor-8 (GDF-8)
CC   coding sequences and proteins. The present sequence is a GDF-8 protein,
CC   which was isolated in the present invention. GDF-8 is useful for treating
CC   neurodegenerative diseases (e.g. amyotrophic lateral sclerosis and
CC   muscular dystrophy), musculodegenerative diseases or in tissue repair due
CC   to trauma, obesity and disorders related to abnormal proliferation of
CC   adipocytes. GDF-8 is also useful for treating malignancies of the various
CC   organ systems, particularly cells in muscle or adipose tissues and in
CC   gene therapy for the treatment of cell proliferative or immunological
CC   diseases mediated by GDF-8. In addition, GDF-8 is also useful for
CC   treating muscle wasting disease, neuromuscular disorder, spinal cord
CC   injury, traumatic injury, congestive obstructive pulmonary disease
CC   (COPD), AIDS or cachexia.
XX
SQ   Sequence   69 AA;

  Query Match             88.1%;  Score 104;  DB 22;  Length 69;
  Best Local Similarity   95.0%;  Pred. No. 3.4e-09;
  Matches   19;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       2 VFLQKYPHTHLVHQANPRGS 21
           ||||||||||||  |||||||
Db      16 VFLQKYPHTHLVQQANPRGS 35


RESULT 100
AAM51927
ID   AAM51927 standard; protein; 109 AA.
XX
AC   AAM51927;
XX
DT   01-FEB-2002  (first entry)
XX
DE   Human TGFbeta protein superfamily protein BMP11.
XX
KW   Human; TGFbeta; transforming growth factor beta; mutant; antagonist;
KW   agonist; ectopic bone formation; psoriasis; muscular atrophy; scar;
KW   formation; fibrosis; cirrhosis; osteopathic; antipsoriatic;
KW   antifibrotic; hepatotropic; vulnerary; BMP11.
XX
OS   Homo sapiens.
XX
PN   DE10026713-A1.
XX
PD   06-DEC-2001.
XX
PF   30-MAY-2000; 2000DE-1026713.
XX
PR   30-MAY-2000; 2000DE-1026713.
XX
PA   (SEBA/) SEBALD W.
XX
PI   Sebald W,  Nickel J;
XX
DR   WPI; 2002-042559/06.
XX
PT   New mutein of transforming growth factor-beta superfamily protein,
PT   useful for treating or preventing e.g. ectopic bone formation, competes
PT   for receptor binding  -
XX
PS   Disclosure; Fig 6; 54pp; German.
XX
CC   The present invention relates to muteins of a chain of a protein which,
CC   when in the form of a homodimer, has antagonistic or partial agonistic
CC   activity, and where the mutation results in the protein binding with low
CC   affinity to its receptor. The protein is a member of the transforming
CC   growth factor beta (TGFbeta) superfamily. The mutant sequences of the
CC   invention can be used in the treatment of diseases associated with the
CC   overexpression of TGFbeta family proteins, including ectopic bone
CC   formation, psoriasis, muscular atrophy, scar formation, fibrosis and
CC   cirrhosis. The present sequence is the human BMP11 protein.
XX
SQ   Sequence   109 AA;

  Query Match             86.4%;  Score 102;  DB 23;  Length 109;
  Best Local Similarity   81.0%;  Pred. No. 1.2e-08;
  Matches   17;  Conservative    3;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           ::|:|||||||||  |||||||
Db      49 YMFMQKYPHTHLVQQANPRGS 69


RESULT 101
AAR66147
ID   AAR66147 standard; Protein; 126 AA.
XX
AC   AAR66147;
XX
DT   10-AUG-1995  (first entry)
XX
DE   Partial bovine bone morphogenetic protein-11 (BMP-11).
XX
KW   Bone morphogenetic protein-11; BMP-11; TGF-beta superfamily.
XX
OS   Bos taurus.
XX
FH   Key             Location/Qualifiers
FT   Protein         18..126
FT                   /label= mature
XX
PN   WO9426892-A.
XX
PD   24-NOV-1994.
XX
PF   12-MAY-1994;   94WO-US05288.
XX
PR   12-MAY-1993;   93US-0061464.
XX
```

```
PA   (GEMY ) GENETICS INST INC.
XX
PI   Celeste AJ,  Wozney JM;
XX
DR   WPI; 1995-006788/01.
DR   N-PSDB; AAQ79444.
XX
PT   New DNA encoding bone morphogenetic protein 11 - and related
PT   vectors, transformed cells and polypeptide(s), including
PT   heterodimers, useful e.g. in fertility control bone and tissue
PT   repair, etc.
XX
PS   Claim 15; Page 40-41; 57pp; English.
XX
CC   A bovine genomic library (strain Bovine·Activin WC) in lambda EMBL3
CC   was screened under low stringency conditions with a 1081-1403 base
CC   fragment of human BMP-7 DNA. Positive clones were screened with BMP-
CC   5, -6, and -7 probes under high stringency conditions and one clone
CC   reactive in the first screen but not in the second was selected. The
CC   hybridisation characteristics were localised to a 0.5 kb fragment.
CC   The partial sequence of this clone, lambda 7r-30 (ATCCD 75439) is
CC   Q79444. The 5' limit of this exon of the bovein BMP-11 gene is
CC   difficult to define. Clone lambda 7r-30 contains at least one exon/
CC   intron boundary. BMP-11 polypeptide exists as a dimer comprising two
CC   of the mature protein AA sequences or as a heterodimer with one
CC   mature sequence from BMP-11 and the other being any of BMP 1-10.
CC   The predicted mol. wt. of the mature active species comprising two
CC   mature protein sequences is approx. 12,000 daltons. Further active
CC   species are contemplated comprising AAs 23-126. Primers C and D
CC   are based on clone lambda 7r-30 (see Q79446, Q79447). Nts 375 or
CC   390-704 of Q79444 are claimed. AAs 18-126 of R66147 are claimed.
XX
SQ   Sequence   126 AA;

  Query Match             86.4%;  Score 102;  DB 16;  Length 126;
  Best Local Similarity   81.0%;  Pred. No. 1.4e-08;
  Matches   17;  Conservative    3;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           ::|:||||||||| |||||||
Db      66 YMFMQKYPHTHLVQQANPRGS 86


RESULT 102
AAR88554
ID   AAR88554 standard; Protein; 126 AA.
XX
AC   AAR88554;
XX
DT   15-APR-1996  (first entry)
XX
DE   Murine growth differentiation factor-11 (GDF-11).
XX
KW   Growth differentiation factor-11; GDF-11; antibody; detection;
KW   disorder; muscle; antisense; suppression; vector; liposome;
KW   targetting.
XX
OS   Mus musculus.
XX
PN   WO9601845-A1.
XX
PD   25-JAN-1996.
XX
PF   07-JUL-1995;   95WO-US08543.
XX
PR   08-JUL-1994;   94US-0272763.
XX
PA   (UYJO ) UNIV JOHNS HOPKINS SCHOOL MED.
XX
PI   Lee S,  Mcpherron AC;
XX
DR   WPI; 1996-097589/10.
DR   N-PSDB; AAT11062.
XX
PT   New Growth Differentiation Factor-11 (GDF-11) - with tissue-specific
PT   expression in muscle, neural and uterine cells, for detecting cell
PT   proliferation disorders
XX
PS   Claim 3; Page 39-40; 67pp; English.
XX
CC   Antibodies directed against the growth differentiation factor (GDF)
CC   are useful for detecting cell proliferative disorders when contacted
CC   with a specimen from a subject suspected of having a GDF-11
CC   associated disorder. Antibody binding constitutes a positive result.
CC   Detection is performed in muscle cells in vitro or in vivo..  The
CC   antibodies may also be used in the treatment of such disorders by
CC   suppressing GDF-11 activity.  Antisense GDF-11 reagents may also be
CC   used.  Vectors are utilised in the treatment process e.g. colloidal
CC   dispersion systems such as liposomes which are target specific and
CC   either anatomically or mechanistically targetted.
XX
SQ   Sequence   126 AA;

  Query Match             86.4%;  Score 102;  DB 17;  Length 126;
  Best Local Similarity   81.0%;  Pred. No. 1.4e-08;
  Matches   17;  Conservative    3;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           ::|:||||||||| |||||||
Db      66 YMFMQKYPHTHLVQQANPRGS 86


RESULT 103
AAW23589
ID   AAW23589 standard; Protein; 126 AA.
XX
AC   AAW23589;
XX
DT   10-NOV-1997  (first entry)
XX
DE   Bovine bone morphogenic protein-11.
XX
KW   BMP-11; regulation; follicle stimulating hormone; FSH; contraception;
KW   bone formation; cartilage formation; connective tissue formation.
XX
OS   Bos taurus.
XX
FH   Key             Location/Qualifiers
FT   Peptide         1..17
FT                   /label= Signal
FT   Protein         18..3
FT                   /label= Bone_morphogenic_protein-11
FT   Cleavage-site   14..17
FT                   /note= "Predicted proteolytic processing sequence
FT                          corresponding to the consensus Arg-X-X-Arg,
FT                          where the signal peptide will be cleaved"
XX
PN   US5639638-A.
XX
PD   17-JUN-1997.
XX
PF   12-MAY-1993;   93US-0061464.
XX
PR   20-MAY-1994;   94US-0247907.
PR   12-MAY-1993;   93US-0061464.
XX
PA   (GEMY ) GENETICS INST INC.
XX
PI   Celeste AJ,  Wozney JM;
XX
DR   WPI; 1997-332045/30.
DR   N-PSDB; AAT74190.
XX
PT   DNA encoding bone morphogenetic protein 11 polypeptide(s) - useful
PT   for regulating follicle-stimulating hormone
XX
```

```
PS   Claim 11; Column 25-26; 20pp; English.
XX
CC   The present sequence represents bovine bone marrow morphogenic protein-
CC   11 (BMP-11). The BMP-11 protein may be useful for regulating follicle-
CC   stimulating hormone (FSH), e.g. for the purpose of contraception or for
CC   inducing bone, cartilage and/or other connective tissue formation. The
CC   protein is produced by culturing the cells of transformed with the DNA
CC   followed by recovering and purifying the BMP-11 sequence from the
CC   culture medium.
XX
SQ   Sequence   126 AA;

  Query Match             86.4%;  Score 102;  DB 18;  Length 126;
  Best Local Similarity   81.0%;  Pred. No. 1.4e-08;
  Matches   17;  Conservative    3;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           ::|:|||||||||| |||||||
Db      66 YMFMQKYPHTHLVQQANPRGS 86


RESULT 104
AAW65459
ID   AAW65459 standard; Protein; 126 AA.
XX
AC   AAW65459;
XX
DT   09-NOV-1998  (first entry)
XX
DE   Mouse growth differentiation factor-11 C-terminal region.
XX
KW   Growth differentiation factor-11; GDF-11; mouse; transgenic animal;
KW   transforming growth factor-beta; cell proliferation;
KW   neuromuscular disorder; muscular dystrophy; muscle atrophy; aging;
KW   obesity; therapy.
XX
OS   Homo sapiens.
XX
PN   WO9835019-A1.
XX
PD   13-AUG-1998.
XX
PF   06-FEB-1998;   98WO-US02310.
XX
PR   06-FEB-1997;   97US-0795671.
XX
PA   (UYJO ) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI   Lee S,  McPherron AC;
XX
DR   WPI; 1998-447217/38.
DR   N-PSDB; AAV07556.
XX
PT   Transgenic animal growth differentiation factor-11 is inhibited - by
PT   insertion of transgene, also use of GDF-11 inhibitors for treating
PT   muscular wasting, neuromuscular disease, obesity
XX
PS   Example 1; Page 54-55; 89pp; English.
XX
CC   This is the amino acid sequence of the C-terminal portion of murine
CC   growth differentiation factor-11 (GDF-11).  It was isolated from a
CC   GDF-11 genomic DNA fragment (see V0556) obtained from a genomic
CC   library using murine GDF-8 as probe.  GDF-11 is a new member of the
CC   transforming growth factor-beta superfamily that is associated with
CC   various cell proliferative disorders, especially those involving
CC   muscle, nerve and adipose tissue.  Human full-length GDF-11 (see
CC   AAW65458) is also provided.  Claimed transgenic animals, especially
CC   bovine, porcine, ovine or avian animals, have been altered so that
CC   production of GDF-11 is reduced or completely disrupted.  Such
CC   animals have higher than normal levels of muscle tissue, preferably
CC   without increased fat and/or cholesterol levels, and are useful as
CC   food products.  The invention also provides methods for treating a
CC   muscle or adipose tissue disorder in an animal, including humans.
CC   A GDF-11 antibody, antisense molecule or dominant negative
CC   polypeptide (or a polynucleotide encoding a dominant negative
CC   polypeptide) can be administered to a patient to treat e.g. a
CC   muscle wasting disease, a neuromuscular disorder, muscle atrophy,
CC   obesity or other adipocyte cell disorders, and aging.
XX
SQ   Sequence   126 AA;

  Query Match             86.4%;  Score 102;  DB 19;  Length 126;
  Best Local Similarity   81.0%;  Pred. No. 1.4e-08;
  Matches   17;  Conservative    3;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           ::|:|||||||||| |||||||
Db      66 YMFMQKYPHTHLVQQANPRGS 86


RESULT 105
AAW40816
ID   AAW40816 standard; Protein; 126 AA.
XX
AC   AAW40816;
XX
DT   02-APR-1998  (first entry)
XX
DE   Bovine bone morphogenetic protein-11.
XX
KW   Bone-morphogenetic protein-11; BMP-11; inhibin-beta; inhibin-alpha;
KW   bone formation; cartilage repair; wound healing; periodontal disease;
KW   follicle stimulating hormone regulator; contraception; haematopoiesis;
KW   gondal tumour suppressor; therapy; bovine; cow.
XX
OS   Bos sp.
XX
FH   Key             Location/Qualifiers
FT   Peptide         1..17
FT                   /note= "signal peptide"
FT   Protein         18..126
FT                   /note= "mature BMP-11"
XX
PN   US5700911-A.
XX
PD   23-DEC-1997.
XX
PF   30-MAY-1995;   95US-0452772.
XX
PR   20-MAY-1994;   94US-0247907.
PR   12-MAY-1993;   93US-0061464.
PR   30-MAY-1995;   95US-0452772.
XX
PA   (GEMY ) GENETICS INST INC.
XX
PI   Celeste AJ,  Wozney JM;
XX
DR   WPI; 1998-062433/06.
DR   N-PSDB; AAV03609.
XX
PT   Human and bovine bone morphogenetic protein 11 - useful for inducing
PT   bone and cartilage formation
XX
PS   Claim 1; Column 23-26; 19pp; English.
XX
CC   This sequence represents the bovine bone morphogenetic protein-11
CC   (BMP-11) of the invention. The human BMP-11 polypeptide (see AAW40817),
CC   mature human BMP-11, or its dimers with other inhibin-beta,
CC   inhibin-alpha or bone morphogenetic proteins are useful for inducing bone
CC   and/or cartilage formation, e.g. for bone, ligament or cartilage repair,
CC   wound healing or treatment of periodontal disease. BMP-11 may also be
CC   useful for regulating the production of follicle stimulating hormone,
CC   for contraception, to stimulate haematopoiesis, and to suppress the
CC   development of gondal tumours.
XX
SQ   Sequence   126 AA;
```

```
  Query Match             86.4%;  Score 102;  DB 19;  Length 126;
  Best Local Similarity   81.0%;  Pred. No. 1.4e-08;
  Matches   17;  Conservative    3;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           ::|:|||||||| |||||||
Db      66 YMFMQKYPHTHLVQQANPRGS 86


RESULT 106
AAY06096
ID   AAY06096 standard; Protein; 126 AA.
XX
AC   AAY06096;
XX
DT   16-AUG-1999  (first entry)
XX
DE   Bovine activin WC (bone morphogenetic protein 11).
XX
KW   Activin WC; bone morphogenetic protein 11; BMP-11; cattle; bovine;
KW   bone; cartilage; connective tissue; neuronal tissue;
KW   wound healing; tissue repair; vulnerary; contraceptive;
KW   transforming growth factor-beta.
XX
OS   Bos taurus.
XX
FH   Key             Location/Qualifiers
FT   Peptide         1..17
FT                   /note= "partial propeptide"
FT   Cleavage-site   14..17
FT                   /note= "consensus proteolytic cleavage site"
FT   Protein         18..126
FT                   /note= "mature protein"
XX
PN   WO9924058-A2.
XX
PD   20-MAY-1999.
XX
PF   06-NOV-1998;   98WO-US23827.
XX
PR   07-NOV-1997;   97US-0966297.
XX
PA   (GEMY ) GENETICS INST INC.
XX
PI   Celeste AJ,  Thies SR,  Wozney JM;
XX
DR   WPI; 1999-327207/27.
DR   N-PSDB; AAX58652.
XX
PT   Administration of human or bovine bone morphogenetic protein 11
XX
PS   Claim 1; Page 56; 62pp; English.
XX
CC   This is a partial amino acid sequence of bovine activin WC, or
CC   bone morphogenetic protein 11 (BMP-11).  It comprises a partial
CC   propeptide and the complete mature bovine BMP-11 polypeptide.
CC   Bovine BMP-11 is a member of the transforming growth factor beta
CC   superfamily.  It can be produced by culturing a host cell
CC   transformed with bovine BMP-11 DNA (see AAX58652).  BMP-11 proteins
CC   may be used to induce bone and/or cartilage formation and in
CC   wound healing and tissue repair, or for augmenting the activity of
CC   other BMP proteins.  BMP-11 may also be useful for regulating the
CC   production of follicle stimulating hormone (e.g. for contraception),
CC   to stimulate haematopoiesis, to suppress the development of gonadal
CC   tumours, and especially (claimed) to induce neuronal cell
CC   formation, growth differentiation, proliferation and maintenance.
XX
SQ   Sequence   126 AA;

  Query Match             86.4%;  Score 102;  DB 20;  Length 126;
  Best Local Similarity   81.0%;  Pred. No. 1.4e-08;
  Matches   17;  Conservative    3;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           ::|:|||||||| |||||||
Db      66 YMFMQKYPHTHLVQQANPRGS 86


RESULT 107
AAY06099
ID   AAY06099 standard; Protein; 126 AA.
XX
AC   AAY06099;
XX
DT   16-AUG-1999  (first entry)
XX
DE   Bovine activin WC (bone morphogenetic protein 11).
XX
KW   Activin WC; bone morphogenetic protein 11; BMP-11; cattle; bovine;
KW   bone; cartilage; connective tissue; neuronal tissue; neuropathy;
KW   wound healing; tissue repair; vulnerary; contraceptive;
KW   transforming growth factor-beta.
XX
OS   Bos taurus.
XX
FH   Key             Location/Qualifiers
FT   Peptide         1..17
FT                   /note= "partial propeptide"
FT   Cleavage-site   14..17
FT                   /note= "consensus proteolytic cleavage site"
FT   Protein         18..126
FT                   /note= "mature protein"
XX
PN   WO9924057-A2.
XX
PD   20-MAY-1999.
XX
PF   23-OCT-1998;   98WO-US22574.
XX
PR   07-NOV-1997;   97US-0966297.
XX
PA   (GEMY ) GENETICS INST INC.
XX
PI   Celeste AJ,  Thies SR,  Wozney JM;
XX
DR   WPI; 1999-337638/28.
DR   N-PSDB; AAX58657.
XX
PT   Modulating neuronal cell development useful for treating
PT   neurodegenerative diseases, neuropathies and nerve resection
XX
PS   Claim 1; Page 55; 62pp; English.
XX
CC   This is a partial amino acid sequence of bovine activin WC, or
CC   bone morphogenetic protein 11 (BMP-11).  It comprises a partial
CC   propeptide and the complete mature bovine BMP-11 polypeptide.
CC   Bovine BMP-11 is a member of the transforming growth factor beta
CC   superfamily.  It can be produced by culturing a host cell
CC   transformed with bovine BMP-11 DNA (see AAX58657).  BMP-11 proteins
CC   may be used to induce bone and/or cartilage formation and in
CC   wound healing and tissue repair, or for augmenting the activity of
CC   other BMP proteins.  BMP-11 may also be useful for regulating the
CC   production of follicle stimulating hormone (e.g. for contraception),
CC   to stimulate haematopoiesis, to suppress the development of gonadal
CC   tumours, and especially (claimed) to induce neuronal cell
CC   formation, growth differentiation, proliferation and maintenance.
XX
SQ   Sequence   126 AA;

  Query Match             86.4%;  Score 102;  DB 20;  Length 126;
  Best Local Similarity   81.0%;  Pred. No. 1.4e-08;
  Matches   17;  Conservative    3;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           ::|:|||||||| |||||||
```

```
Db     66 YMFMQKYPHTHLVQQANPRGS 86


RESULT 108
AAY77565
ID   AAY77565 standard; Protein; 126 AA.
XX
AC   AAY77565;
XX
DT   08-MAY-2000  (first entry)
XX
DE   Mouse growth differentiation factor-11 (GDF-11) partial sequence.
XX
KW   Growth differentiation factor-11; GDF-11; renal disease; cancer;
KW   muscle associated disorder; AIDS; cell proliferation; immunologic; fat;
KW   neurodegenerative disorder; adipose tissue disorder; animal food; muscle;
KW   obesity; nephrotropic; cytostatic; anti-HIV; anorectic; mouse.
XX
OS   Mus sp.
XX
FH   Key             Location/Qualifiers
FT   Region          14..17
FT                   /note= "putative proteolytic processing site"
XX
PN   WO200006716-A1.
XX
PD   10-FEB-2000.
XX
PF   28-JUL-1999;   99WO-US17252.
XX
PR   28-JUL-1998;   98US-0123929.
XX
PA   (UYJO ) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI   Lee S,  McPherron AC;
XX
DR   WPI; 2000-195289/17.
DR   N-PSDB; AAZ58970.
XX
PT   Preparation of transgenic animal food product useful for treating renal
PT   and muscular disorders, comprises introducing transgene interfering
PT   with expression of growth differentiation factor-11 into embryo  -
XX
PS   Example 3; Fig 1A; 97pp; English.
XX
CC   The invention relates to a method for producing animal food products with
CC   increased ribs content. The method comprises: (a) introducing a transgene
CC   which interferes with expression of growth differentiation factor-11
CC   (GDF-11), into an embryo; (b) allowing the embryo to mature; (c) cross-
CC   breeding the transgene-positive progeny; (d) processing these progeny to
CC   obtain the foodstuff. Modulators of GDF-11 are useful for treating acute
CC   or chronic renal disease, and various other muscle associated disorders
CC   e.g cancer, AIDS; cell proliferative disorders, neurodegenerative
CC   disorders; adipose tissue disorders and immunologic disorders. The animal
CC   food product comprises large amounts of muscle and meagre amounts of fats
CC   and cholesterol, hence useful in treating obesity and related disorders.
CC   The present sequence represents a partial mouse GDF-11 polypeptide.
XX
SQ   Sequence   126 AA;

  Query Match             86.4%;  Score 102;  DB 21;  Length 126;
  Best Local Similarity   81.0%;  Pred. No. 1.4e-08;
  Matches   17;  Conservative    3;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           ::|:||||||||| |||||||
Db      66 YMFMQKYPHTHLVQQANPRGS 86


RESULT 109
AAM50649
ID   AAM50649 standard; Protein; 126 AA.
XX
AC   AAM50649;
XX
DT   04-APR-2002  (first entry)
XX
DE   Bovine bone morphogenetic protein BMP-11 partial sequence.
XX
KW   BMP-11; bone morphogenetic protein-11; activin WC; cattle;
KW   vulnerary; contraceptive; neuroprotective; antitumour.
XX
OS   Bos taurus.
XX
FH   Key             Location/Qualifiers
FT   Peptide         1..17
FT                   /label= Pro_peptide
FT   Protein         18..126
FT                   /label= Mature_protein
XX
PN   US6340668-B1.
XX
PD   22-JAN-2002.
XX
PF   07-OCT-1999;   99US-0414234.
XX
PR   20-MAY-1994;   94US-0247907.
PR   12-AUG-1997;   97US-0919850.
PR   07-NOV-1997;   97US-0966297.
PR   12-MAY-1993;   93US-0061464.
PR   30-MAY-1995;   95US-0452772.
XX
PA   (GEMY ) GENETICS INST INC.
XX
PI   Celeste AJ,  Wozney JM,  Thies RS;
XX
DR   WPI; 2002-138498/18.
DR   N-PSDB; ABA91261.
XX
PT   Promoting the survival and activity of neuronal cells in vivo and in
PT   vitro using bone morphogenetic protein-11  -
XX
PS   Claim 1; Column 27-28; 21pp; English.
XX
CC   The present sequence is that of the amino acid sequence of a
CC   partial protein, and the complete mature bovine bone morphogenetic
CC   protein-11 (BMP-11), as deduced from an isolated genomic DNA clone
CC   (see ABA91261).  BMP-11 is a member of the transforming growth
CC   factor-beta superfamily, previously designated as activin WC.
CC   Cleavage of the precursor polypeptide generates a 109-amino acid
CC   mature protein.  Processing of BMP-11 protein is expected to
CC   involve dimerization and removal of the N-terminal region.  BMP-11
CC   homodimer is expected to demonstrate BMP-11 activity, defined as
CC   the ability to regulate the production of follicle stimulating
CC   hormone (FSH), the ability to induce the formation of bone,
CC   cartilage and/or connective tissue, as well as to modulate cell
CC   development, particularly neuronal formation, growth,
CC   differentiation, proliferation and especially neuronal maintenance.
CC   BMP-11 proteins can be obtained by recombinant methods e.g. in
CC   mammalian host cells.  Methods for promoting the survival of neuronal
CC   cells by administration of BMP-11 are claimed.  BMP-11 may be useful
CC   for treatment of neurodegenerative diseases (e.g. Alzheimer's disease,
CC   Parkinson's disease and amylotrophic lateral sclerosis), peripheral
CC   neurotrophy and nerve resection, to promote the differentiation of
CC   stem cells into neuronal cells, and in neuron replacement therapy.
CC   BMP-11 proteins can also be used to induce bone and/or cartilage
CC   formation and in wound healing and tissue repair, or to augment the
CC   activity of other BMPs.  They may also be useful to regulate the
CC   production of FSH, for contraception, to stimulate haematopoiesis,
CC   and to suppress the development of gonadal tumours.
XX
SQ   Sequence   126 AA;

  Query Match             86.4%;  Score 102;  DB 23;  Length 126;
  Best Local Similarity   81.0%;  Pred. No. 1.4e-08;
  Matches   17;  Conservative    3;  Mismatches    1;  Indels    0;  Gaps    0;
```

```
Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           ::|:|||||||| |||||||
Db      66 YMFMQKYPHTHLVQQANPRGS 86


RESULT 110
AAR66149
ID   AAR66149 standard; Protein; 362 AA.
XX
AC   AAR66149;
XX
DT   10-AUG-1995  (first entry)
XX
DE   Partial propeptide and complete mature human bone morphogenetic.
XX
KW   Bone morphogenetic protein-11; BMP-11; TGF-beta superfamily.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   Protein         254..562
FT                   /label= mature
XX
PN   WO9426892-A.
XX
PD   24-NOV-1994.
XX
PF   12-MAY-1994;   94WO-US05288.
XX
PR   12-MAY-1993;   93US-0061464.
XX
PA   (GEMY ) GENETICS INST INC.
XX
PI   Celeste AJ,  Wozney JM;
XX
DR   WPI; 1995-006788/01.
DR   N-PSDB; AAQ79443.
XX
PT   New DNA encoding bone morphogenetic protein 11 - and related
PT   vectors, transformed cells and polypeptide(s), including
PT   heterodimers, useful e.g. in fertility control bone and tissue
PT   repair, etc.
XX
PS   Claim 16; Page 45-46; 57pp; English.
XX
CC   Human fetal brain cDNA library constructed in vector lambda
CC   ZAPII was screened with radioactively labeled probe based
CC   on nts 53-82 of partial human BMP-11 clone (see AAQ79445).
CC   One of the positively hybridising recombinants, named
CC   lambda FB30.5 was isolated. A portion of this clone is
CC   set forth in AAQ79443. Human genomic library constructed in
CC   vector lambda FIX was screened using a probe based on nts 57-
CC   86 of AAQ79443, with the exception of an inadvertent substn. of
CC   CAC for GCG at nts 59-61. One of the positively hybridising
CC   recombinants was named 30GEN.4. A portion of 30GEN-4 is in
CC   AAQ79443. The genomic clone of 30GEN.4 is expected to contain
CC   additional 5' coding sequences. Nts 199-1270 of AAQ79443 are derived
CC   entirely from cDNA clone FB30.5, whilst nts 1-198 are present in
CC   both the 30GEN.4 genomic clone and the FB30.5 cDNA clone.
CC   Nts 375 or 760 or 775 to 1086 of AAQ79443 are claimed.
CC   AAs 254-362 of AAR66149 are claimed.
XX
SQ   Sequence   362 AA;

  Query Match             86.4%;  Score 102;  DB 16;  Length 362;
  Best Local Similarity   81.0%;  Pred. No. 4.7e-08;
  Matches   17;  Conservative    3;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           ::|:|||||||| |||||||
Db     302 YMFMQKYPHTHLVQQANPRGS 322


RESULT 111
AAW23590
ID   AAW23590 standard; Protein; 362 AA.
XX
AC   AAW23590;
XX
DT   10-NOV-1997  (first entry)
XX
DE   Human bone morphogenic protein-11.
XX
KW   BMP-11; regulation; follicle stimulating hormone; FSH; contraception;
KW   bone formation; cartilage formation; connective tissue formation.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   Peptide         1..253
FT                   /label= Signal
FT   Protein         254..362
FT                   /label= Bone_morphogenic_protein-11
FT   Cleavage-site   250..253
FT                   /note= "Predicted proteolytic processing sequence
FT                          corresponding to the consensus Arg-X-X-Arg,
FT                          where the signal peptide will be cleaved"
XX
PN   US5639638-A.
XX
PD   17-JUN-1997.
XX
PF   12-MAY-1993;   93US-0061464.
XX
PR   20-MAY-1994;   94US-0247907.
PR   12-MAY-1993;   93US-0061464.
XX
PA   (GEMY ) GENETICS INST INC.
XX
PI   Celeste AJ,  Wozney JM;
XX
DR   WPI; 1997-332045/30.
DR   N-PSDB; AAT74191.
XX
PT   DNA encoding bone morphogenetic protein 11 polypeptide(s) - useful
PT   for regulating follicle-stimulating hormone
XX
PS   Claim 12; Column 33-36; 20pp; English.
XX
CC   The present sequence represents human bone marrow morphogenic protein-
CC   11 (BMP-11). The BMP-11 protein may be useful for regulating follicle-
CC   stimulating hormone (FSH), e.g. for the purpose of contraception or for
CC   inducing bone, cartilage and/or other connective tissue formation. The
CC   protein is produced by culturing the cells of transformed with the DNA
CC   followed by recovering and purifying the BMP-11 sequence from the
CC   culture medium.
XX
SQ   Sequence   362 AA;

  Query Match             86.4%;  Score 102;  DB 18;  Length 362;
  Best Local Similarity   81.0%;  Pred. No. 4.7e-08;
  Matches   17;  Conservative    3;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           ::|:|||||||| |||||||
Db     302 YMFMQKYPHTHLVQQANPRGS 322


RESULT 112
AAW40817
ID   AAW40817 standard; Protein; 362 AA.
XX
AC   AAW40817;
XX
DT   02-APR-1998  (first entry)
```

```
XX
DE   Human bone morphogenetic protein-11.
XX
KW   Bone-morphogenetic protein-11; BMP-11; inhibin-beta; inhibin-alpha;
KW   bone formation; cartilage repair; wound healing; periodontal disease;
KW   follicle stimulating hormone regulator; contraception; haematopoiesis;
KW   gondal tumour suppressor; human; therapy.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   Peptide         1..253
FT                   /note= "signal peptide"
FT   Protein         254..362
FT                   /note= "mature BMP-11"
XX
PN   US5700911-A.
XX
PD   23-DEC-1997.
XX
PF   30-MAY-1995;   95US-0452772.
XX
PR   20-MAY-1994;   94US-0247907.
PR   12-MAY-1993;   93US-0061464.
PR   30-MAY-1995;   95US-0452772.
XX
PA   (GEMY ) GENETICS INST INC.
XX
PI   Celeste AJ,  Wozney JM;
XX
DR   WPI; 1998-062433/06.
DR   N-PSDB; AAV03610.
XX
PT   Human and bovine bone morphogenetic protein 11 - useful for inducing
PT   bone and cartilage formation
XX
PS   Claim 2; Column 31-34; 19pp; English.
XX
CC   This sequence represents the human bone morphogenetic protein-11 (BMP-11)
CC   of the invention. The human BMP-11 polypeptide, mature human
CC   BMP-11, or its dimers with other inhibin-beta, inhibin-alpha or bone
CC   morphogenetic proteins are useful for inducing bone and/or cartilage
CC   formation, e.g. for bone, ligament or cartilage repair, wound healing or
CC   treatment of periodontal disease. BMP-11 may also be useful for
CC   regulating the production of follicle stimulating hormone, for
CC   contraception, to stimulate haematopoiesis, and to suppress the
CC   development of gondal tumours.
XX
SQ   Sequence   362 AA;

  Query Match             86.4%;  Score 102;  DB 19;  Length 362;
  Best Local Similarity   81.0%;  Pred. No. 4.7e-08;
  Matches   17;  Conservative    3;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           ::|:|||||||||| |||||||
Db     302 YMFMQKYPHTHLVQQANPRGS 322


RESULT 113
AAY06101
ID   AAY06101 standard; Protein; 362 AA.
XX
AC   AAY06101;
XX
DT   23-AUG-1999  (first entry)
XX
DE   Human bone morphogenetic protein 11.
XX
KW   Activin WC; bone morphogenetic protein 11; BMP-11; cattle; bovine;
KW   bone; cartilage; connective tissue; neuronal tissue;
KW   wound healing; tissue repair; vulnerary; contraceptive;
KW   transforming growth factor-beta.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   Peptide         1..253
FT                   /note= "partial propeptide"
FT   Cleavage-site   150..253
FT                   /note= "consensus proteolytic cleavage site"
FT   Protein         254..362
FT                   /note= "mature protein"
XX
PN   WO9924057-A2.
XX
PD   20-MAY-1999.
XX
PF   23-OCT-1998;   98WO-US22574.
XX
PR   07-NOV-1997;   97US-0966297.
XX
PA   (GEMY ) GENETICS INST INC.
XX
PI   Celeste AJ,  Thies SR,  Wozney JM;
XX
DR   WPI; 1999-337638/28.
DR   N-PSDB; AAX58661.
XX
PT   Modulating neuronal cell development useful for treating
PT   neurodegenerative diseases, neuropathies and nerve resection
XX
PS   Claim 1; Page 61-62; 62pp; English.
XX
CC   This is a partial amino acid sequence of human bone morphogenetic
CC   protein 11 (BMP-11).  It comprises a partial propeptide and the
CC   complete mature human BMP-11 polypeptide.  Human BMP-11 is a member
CC   of the transforming growth factor beta superfamily.  It can be
CC   produced by culturing a host cell transformed with human BMP-11
CC   DNA (see AAX58661).  BMP-11 proteins can be used to induce bone and/or
CC   cartilage formation and in wound healing and tissue repair, or to
CC   augment the activity of other BMP proteins.  BMP-11 may also be
CC   useful for regulating the production of follicle stimulating hormone
CC   (e.g. for contraception), to stimulate haematopoiesis, to suppress
CC   the development of gonadal tumours, and especially (claimed) to
CC   induce neuronal cell formation, growth differentiation,
CC   proliferation and maintenance.
XX
SQ   Sequence   362 AA;

  Query Match             86.4%;  Score 102;  DB 20;  Length 362;
  Best Local Similarity   81.0%;  Pred. No. 4.7e-08;
  Matches   17;  Conservative    3;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           ::|:|||||||||| |||||||
Db     302 YMFMQKYPHTHLVQQANPRGS 322


RESULT 114
AAY06098
ID   AAY06098 standard; Protein; 362 AA.
XX
AC   AAY06098;
XX
DT   16-AUG-1999  (first entry)
XX
DE   Human bone morphogenetic protein 11.
XX
KW   Activin WC; bone morphogenetic protein 11; BMP-11; cattle; bovine;
KW   bone; cartilage; connective tissue; neuronal tissue;
KW   wound healing; tissue repair; vulnerary; contraceptive;
KW   transforming growth factor-beta.
XX
OS   Homo sapiens.
XX
```

```
FH   Key             Location/Qualifiers
FT   Peptide         1..253
FT                   /note= "partial propeptide"
FT   Cleavage-site   150..253
FT                   /note= "consensus proteolytic cleavage site"
FT   Protein         254..362
FT                   /note= "mature protein"
XX
PN   WO9924058-A2.
XX
PD   20-MAY-1999.
XX
PF   06-NOV-1998;   98WO-US23827.
XX
PR   07-NOV-1997;   97US-0966297.
XX
PA   (GEMY ) GENETICS INST INC.
XX
PI   Celeste AJ,  Thies SR,  Wozney JM;
XX
DR   WPI; 1999-327207/27.
DR   N-PSDB; AAX58656.
XX
PT   Administration of human or bovine bone morphogenetic protein 11
XX
PS   Claim 1; Page 61-62; 62pp; English.
XX
CC   This is a partial amino acid sequence of human bone morphogenetic
CC   protein 11 (BMP-11).  It comprises a partial propeptide and the
CC   complete mature human BMP-11 polypeptide.  Human BMP-11 is a member
CC   of the transforming growth factor beta superfamily.  It can be
CC   produced by culturing a host cell transformed with human BMP-11
CC   DNA (see AAX58656).  BMP-11 proteins may be used to induce bone and/or
CC   cartilage formation and in wound healing and tissue repair, or to
CC   augment the activity of other BMP proteins.  BMP-11 may also be
CC   useful for regulating the production of follicle stimulating hormone
CC   (e.g. for contraception), to stimulate haematopoiesis, to suppress
CC   the development of gonadal tumours, and especially (claimed) to
CC   induce neuronal cell formation, growth differentiation,
CC   proliferation and maintenance.
XX
SQ   Sequence   362 AA;

  Query Match             86.4%;  Score 102;  DB 20;  Length 362;
  Best Local Similarity   81.0%;  Pred. No. 4.7e-08;
  Matches   17;  Conservative    3;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           ::|:|||||||||| |||||||
Db     302 YMFMQKYPHTHLVQQANPRGS 322


RESULT 115
AAM50650
ID   AAM50650 standard; Protein; 362 AA.
XX
AC   AAM50650;
XX
DT   04-APR-2002  (first entry)
XX
DE   Human bone morphogenetic protein BMP-11.
XX
KW   BMP-11; bone morphogenetic protein-11; activin WC; human;
KW   vulnerary; contraceptive; neuroprotective; antitumour.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   Peptide         1..253
FT                   /label= Pro-peptide
FT   Protein         254..362
FT                   /label= Mature_protein
XX
PN   US6340668-B1.
XX
PD   22-JAN-2002.
XX
PF   07-OCT-1999;   99US-0414234.
XX
PR   20-MAY-1994;   94US-0247907.
PR   12-AUG-1997;   97US-0919850.
PR   07-NOV-1997;   97US-0966297.
PR   12-MAY-1993;   93US-0061464.
PR   30-MAY-1995;   95US-0452772.
XX
PA   (GEMY ) GENETICS INST INC.
XX
PI   Celeste AJ,  Wozney JM,  Thies RS;
XX
DR   WPI; 2002-138498/18.
DR   N-PSDB; ABA91262.
XX
PT   Promoting the survival and activity of neuronal cells in vivo and in
PT   vitro using bone morphogenetic protein-11  -
XX
PS   Claim 1; Column 37-38; 21pp; English.
XX
CC   The present sequence is that of a partial propeptide and the
CC   complete mature protein of human bone morphogenetic protein-11
CC   (BMP-11), as predicted from the DNA sequence given in ABA91262.
CC   Processing into the mature form is expected to involve dimerization
CC   and removal of the N-terminal region.  BMP-11 is a member of the
CC   transforming growth factor-beta superfamily, previously designated
CC   as activin WC.  BMP-11 homodimer is expected to demonstrate BMP-11
CC   activity, defined as the ability to regulate the production of
CC   follicle stimulating hormone (FSH), the ability to induce the
CC   formation of bone, cartilage and/or connective tissue, as well as
CC   to modulate cell development, particularly neuronal formation, growth,
CC   differentiation, proliferation and especially neuronal maintenance.
CC   Heterodimers of BMP-11 and another member of the BMP/TGF-beta
CC   superfamily may also have BMP-11 activity.  Methods for promoting
CC   the survival of neuronal cells by administration of BMP-11 are
CC   claimed.  BMP-11 may be useful for treatment of neurodegenerative
CC   diseases (e.g. Alzheimer's disease, Parkinson's disease and
CC   amylotrophic lateral sclerosis), peripheral neurotrophy and nerve
CC   resection, to promote the differentiation of stem cells into
CC   neuronal cells, and in neuron replacement therapy. BMP-11 proteins
CC   can also be used to induce bone and/or cartilage formation and in
CC   wound healing and tissue repair, or to augment the activity of
CC   other BMPs.  They may also be useful to regulate the production of
CC   FSH, for contraception, to stimulate haematopoiesis, and to
CC   suppress the development of gonadal tumours.
XX
SQ   Sequence   362 AA;

  Query Match             86.4%;  Score 102;  DB 23;  Length 362;
  Best Local Similarity   81.0%;  Pred. No. 4.7e-08;
  Matches   17;  Conservative    3;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           ::|:|||||||||| |||||||
Db     302 YMFMQKYPHTHLVQQANPRGS 322


RESULT 116
AAR88553
ID   AAR88553 standard; Protein; 407 AA.
XX
AC   AAR88553;
XX
DT   15-APR-1996  (first entry)
XX
DE   Growth differentiation factor-11 (GDF-11).
XX
KW   Growth differentiation factor-11; GDF-11; antibody; detection;
KW   disorder; muscle; antisense; suppression; vector; liposome;
```

KW targetting.
XX
OS Homo sapiens.
XX
PN WO9601845-A1.
XX
PD 25-JAN-1996.
XX
PF 07-JUL-1995; 95WO-US08543.
XX
PR 08-JUL-1994; 94US-0272763.
XX
PA (UYJO) UNIV JOHNS HOPKINS SCHOOL MED.
XX
PI Lee S, Mcpherron AC;
XX
DR WPI; 1996-097589/10.
DR N-PSDB; AAT11061.
XX
PT New Growth Differentiation Factor-11 (GDF-11) - with tissue-specific
PT expression in muscle, neural and uterine cells, for detecting cell
PT proliferation disorders
XX
PS Claim 3; Page 36-37; 67pp; English.
XX
CC Antibodies directed against the growth differentiation factor (GDF)
CC are useful for detecting cell proliferative disorders when contacted
CC with a specimen from a subject suspected of having a GDF-11
CC associated disorder. Antibody binding constitutes a positive result.
CC Detection is performed in muscle cells in vitro or in vivo.. The
CC antibodies may also be used in the treatment of such disorders by
CC suppressing GDF-11 activity. Antisense GDF-11 reagents may also be
CC used. Vectors are utilised in the treatment process e.g. colloidal
CC dispersion systems such as liposomes which are target specific and
CC either anatomically or mechanistically targetted.
XX
SQ Sequence 407 AA;

Query Match 86.4%; Score 102; DB 17; Length 407;
Best Local Similarity 81.0%; Pred. No. 5.4e-08;
Matches 17; Conservative 3; Mismatches 1; Indels 0; Gaps 0;

Qy 1 FVFLQKYPHTHLVHQANPRGS 21
::|:|||||||||| |||||||
Db 347 YMFMQKYPHTHLVQQANPRGS 367

RESULT 117
AAW65458
ID AAW65458 standard; Protein; 407 AA.
XX
AC AAW65458;
XX
DT 09-NOV-1998 (first entry)
XX
DE Human growth differentiation factor-11.
XX
KW Growth differentiation factor-11; GDF-11; human; transgenic animal;
KW transforming growth factor-beta; cell proliferation;
KW muscular wastage; muscle atrophy; neuromuscular disease;
KW muscular dystrophy; aging; obesity; therapy.
XX
OS Homo sapiens.
XX
FH Key Location/Qualifiers
FT Modified-site 94
FT /note= "N-glycosylated"
FT Cleavage-site 295..298
FT /note= "RXXR proteolytic cleavage site"
FT Protein 299..407
FT /note= "predicted active C-terminal fragment of
FT approx. 12.5 kDa"
XX
PN WO9835019-A1.
XX
PD 13-AUG-1998.
XX
PF 06-FEB-1998; 98WO-US02310.
XX
PR 06-FEB-1997; 97US-0795671.
XX
PA (UYJO) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI Lee S, McPherron AC;
XX
DR WPI; 1998-447217/38.
DR N-PSDB; AAV07555.
XX
PT Transgenic animal growth differentiation factor-11 is inhibited - by
PT insertion of transgene, also use of GDF-11 inhibitors for treating
PT muscular wasting, neuromuscular disease, obesity
XX
PS Example 3; Page 52-53; 89pp; English.
XX
CC This is the amino acid sequence of human growth differentiation
CC factor-11 (GDF-11), a new member of the transforming growth
CC factor-beta superfamily that is associated with various cell
CC proliferative disorders, especially those involving muscle, nerve
CC and adipose tissue. The sequence was deduced from a nucleotide
CC sequence (see AAV07555) derived from isolated cDNA and genomic DNA
CC clones. GDF-11 polypeptide shows 92% homology to GDF-8 (see
CC AAW65460). Claimed transgenic animals, especially bovine, porcine,
CC ovine or avian animals, have been altered so that production of
CC GDF-11 is reduced or completely disrupted. Such animals have higher
CC than normal levels of muscle tissue, preferably without increased
CC fat and/or cholesterol levels, and are useful as food products. The
CC invention also provides methods for treating a muscle or adipose
CC tissue disorder in an animal, including humans. A GDF-11 antibody,
CC antisense molecule or dominant negative polypeptide (or a
CC polynucleotide encoding a dominant negative polypeptide) can be
CC administered to a patient to treat e.g. a muscle wasting disease,
CC a neuromuscular disorder, muscle atrophy, obesity or other
CC adipocyte cell disorders, and aging. A method is also provided
CC for identifying compounds that modulate GDF-11 activity or
CC gene expression.
XX
SQ Sequence 407 AA;

Query Match 86.4%; Score 102; DB 19; Length 407;
Best Local Similarity 81.0%; Pred. No. 5.4e-08;
Matches 17; Conservative 3; Mismatches 1; Indels 0; Gaps 0;

Qy 1 FVFLQKYPHTHLVHQANPRGS 21
::|:|||||||||| |||||||
Db 347 YMFMQKYPHTHLVQQANPRGS 367

RESULT 118
AAY31195
ID AAY31195 standard; Protein; 407 AA.
XX
AC AAY31195;
XX
DT 29-OCT-1999 (first entry)
XX
DE Human GDF-11 protein.
XX
KW GDF-8; growth differentiation factor receptor; GDF-11; therapy; human;
KW veterinary; medicine; treatment; muscle tissue disease; wasting disease;
KW neuromuscular disorder; muscular atrophy; spinal cord injury; aging; fat;
KW traumatic injury; acquired immune deficiency syndrome; cachexia;
KW congenital obstructive pulmonary disease; transgenic animal; transgene;
KW food animal; cholesterol; muscle mass; diagnostic.
XX
OS Homo sapiens.
XX

```
PN   WO9906559-A1.
XX
PD   11-FEB-1999.
XX
PF   28-JUL-1998;   98WO-US15598.
XX
PR   01-AUG-1997;   97US-0054461.
XX
PA   (UYJO ) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI   Lee S,  McPherron A;
XX
DR   WPI; 1999-153789/13.
DR   N-PSDB; AAZ09371.
XX
PT   Recombinant cells that express growth-differentiation factor
PT   receptors - and related antibodies, nucleic acids, vector,
PT   transformed cells, peptide fragments and transgenic animals, for
PT   treatment and diagnosis of muscle tissue diseases
XX
PS   Examples; Fig 4; 89pp; English.
XX
CC   This invention describes novel recombinant cell lines that express
CC   growth-differentiation factor-8 (GDF-8) receptor polypeptide or GDF-11
CC   receptor polypeptide. The GDF receptors are used to identify specific
CC   (ant)agonists, potentially useful therapeutically in human or veterinary
CC   medicine. Antibodies derived from the products of the invention are used
CC   to treat muscle tissue diseases (particularly wasting diseases,
CC   neuromuscular disorders, muscular atrophy and aging, e.g. spinal cord and
CC   traumatic injury, congenital obstructive pulmonary diseases, acquired
CC   immune deficiency syndrome and cachexia). Transgenic, non-human animals
CC   that express the products of the invention from a transgene present in
CC   germ and somatic cells, specifically where GDF-8 receptor is expressed,
CC   may be food animals and have decreased fat and cholesterol contents and
CC   increased muscle mass. Peptides derived from the products of the
CC   invention and GDF-receptor binding and blocking agents, are reagents and
CC   diagnostic agents for studying muscle wasting diseases and for
CC   development of therapeutic agents. This sequence represents the human
CC   GDF-11 protein which is used in the method of the invention.
XX
SQ   Sequence   407 AA;

  Query Match             86.4%;  Score 102;  DB 20;  Length 407;
  Best Local Similarity   81.0%;  Pred. No. 5.4e-08;
  Matches   17;  Conservative    3;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           ::|:||||||||| |||||||
Db     347 YMFMQKYPHTHLVQQANPRGS 367


RESULT 119
AAB21088
ID   AAB21088 standard; Protein; 407 AA.
XX
AC   AAB21088;
XX
DT   19-DEC-2000  (first entry)
XX
DE   Human GDF-11.
XX
KW   GDF-11; growth differentiation factor-11; myostatin; human;
KW   activity inhibitor; muscle-associated disorder; cancer;
KW   muscular dystrophy; spinal cord injury; traumatic injury;
KW   congestive obstructive pulmonary disease; AIDS; cachexia;
KW   adipocyte proliferative disorder; obesity; glucose transport modulation;
KW   diabetes.
XX
OS   Homo sapiens.
XX
PN   WO200043781-A2.
XX
PD   27-JUL-2000.
XX
PF   21-JAN-2000; 2000WO-US01552.
XX
PR   21-JAN-1999;   99US-0116639.
PR   10-JUN-1999;   99US-0138363.
XX
PA   (META-) METAMORPHIX INC.
XX
PI   Topouzis S,  Wright JF,  Ratovitski T,  Liang L,  Brady JL,  Sinha D;
PI   Yaswen-Corkery L;
XX
DR   WPI; 2000-505849/45.
XX
PT   Novel method for identifying inhibitors of growth differentiation
PT   factor (GDF) proteins which used to treat a variety of diseases  -
XX
PS   Disclosure; Fig 17; 122pp; English.
XX
CC   The invention relates to inhibitors of GDFs (growth differentiation
CC   factors), and methods of identifying such inhibitors. The GDF inhibitors
CC   of the invention encompass GDF-specific ribozymes (AAA90265-A90268 and
CC   AAA90294-A90297), GDF-8 antisense oligonucleotides (AAA90269-A90288), and
CC   GDF protein fragments or variants (AAB21078, AAB21082-B21083 and
CC   AAB21085-B21086). The methods are used to identify inhibitors of GDF
CC   proteins, especially GDF-8 (also known as myostatin) and GDF-11. The
CC   inhibitors can be used to modulate GDF-8 or GDF-11 activity or
CC   expression. They can be used to treat diseases or disorders characterised
CC   by aberrant expression of GDF-8 or GDF-11, such as muscle-associated
CC   disorders including cancer, muscular dystrophy, spinal cord injury,
CC   traumatic injury, congestive obstructive pulmonary disease, AIDS and
CC   cachexia, and may also be used to treat obesity and other disorders
CC   related to abnormal proliferation of adipocytes. They may also be used
CC   to treat diabetes via the modulation of glucose transport (e.g., by
CC   increasing the activity of the GLUT4 glucose transporter). The
CC   present sequence represents human GDF-11.
XX
SQ   Sequence   407 AA;

  Query Match             86.4%;  Score 102;  DB 21;  Length 407;
  Best Local Similarity   81.0%;  Pred. No. 5.4e-08;
  Matches   17;  Conservative    3;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           ::|:||||||||| |||||||
Db     347 YMFMQKYPHTHLVQQANPRGS 367


RESULT 120
AAY92030
ID   AAY92030 standard; Protein; 407 AA.
XX
AC   AAY92030;
XX
DT   19-JUL-2000  (first entry)
XX
DE   Human bone morphogenic protein-11 (BMP-11).
XX
KW   human bone morphogenic protein-11; BMP-11; CKGF; mutant;
KW   cystine knot growth factor; hairpin loop; infertility.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   Misc-difference 1..317
FT                   /note= "optionally mutated to increase electrostatic
FT                         interaction between beta hairpin structure and
FT                         a receptor"
FT   Domain          318..337
FT                   /label= beta_hairpin_loop_1
FT                   /note= "mutant optionally comprises one or more
FT                         substitutions in these residues"
FT   Misc-difference 338..375
FT                   /note= "optionally mutated to increase electrostatic
```

```
FT                      interaction between beta hairpin structure and
FT                      a receptor"
FT   Domain          376..400
FT                   /label= beta_hairpin_loop_3
FT                   /note= "mutant optionally comprises one or more
FT                      substitutions in these residues"
FT   Misc-difference 401..407
FT                   /note= "optionally mutated to increase electrostatic
FT                      interaction between beta hairpin structure and
FT                      a receptor"
XX
PN   WO200017360-A1.
XX
PD   30-MAR-2000.
XX
PF   19-MAR-1999;   99WO-US05908.
XX
PR   22-SEP-1998;   98WO-US19772.
XX
PA   (UYMA-) UNIV MARYLAND BALTIMORE.
XX
PI   Weintraub BD,  Szkudlinski MW;
XX
DR   WPI; 2000-283585/24.
XX
PT   New mutant cystine knot growth factor proteins comprising one or more
PT   mutant subunits, useful for treating or preventing diseases e.g.
PT   hypothyroidism and thyroid cancer
XX
PS   Claim 490; Page 310; 320pp; English.
XX
CC   This is the wild type human bone morphogenic protein-11 (BMP-11).
CC   Mutants comprise at least one electrostatic charge altering mutation in a
CC   beta hairpin loop, resulting in increased bioactivity.
CC   Mutant cystine knot growth factor (CKGF) proteins comprising one or more
CC   mutant subunits and having novel properties or improved pharmacological
CC   properties, compared to wild type CKGFs, are claimed.  The CKGF
CC   superfamily comprises at least four families of growth factors: the
CC   glycoprotein hormones, the platelet-derived growth factor (PDGF) family,
CC   the neurotrophins and the transforming growth factor-beta family; the
CC   families are known to be structurally similar (especially comprising the
CC   cystine knot topology) and it was shown that mutations at certain
CC   positions in the CKGF hairpin loops of family members and other members
CC   of the CKGF superfamily could significantly alter the biological
CC   activities of the CKGF.
CC   Mutant transforming growth factor family proteins or analogues are useful
CC   for treatment of ovulatory dysfunction, luteal phase defect, unexplained
CC   infertility, time-limited conception and in assisted reproduction.
XX
SQ   Sequence   407 AA;

  Query Match             86.4%;  Score 102;  DB 21;  Length 407;
  Best Local Similarity   81.0%;  Pred. No. 5.4e-08;
  Matches   17;  Conservative    3;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           ::|:|||||||||| |||||||
Db     347 YMFMQKYPHTHLVQQANPRGS 367


RESULT 121
AAY77564
ID   AAY77564 standard; Protein; 407 AA.
XX
AC   AAY77564;
XX
DT   08-MAY-2000  (first entry)
XX
DE   Human growth differentiation factor-11 (GDF-11).
XX
KW   Growth differentiation factor-11; GDF-11; renal disease; cancer; human;
KW   muscle associated disorder; AIDS; cell proliferation; immunologic; fat;
KW   neurodegenerative disorder; adipose tissue disorder; animal food; muscle;
KW   obesity; nephrotropic; cytostatic; anti-HIV; anorectic; chromosome 2;
KW   chromosome 12.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   Modified-site   94..96
FT                   /note= "Asn is potentially N-glycosylated"
FT   Region          295..298
FT                   /note= "putative proteolytic processing site"
XX
PN   WO200006716-A1.
XX
PD   10-FEB-2000.
XX
PF   28-JUL-1999;   99WO-US17252.
XX
PR   28-JUL-1998;   98US-0123929.
XX
PA   (UYJO ) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI   Lee S,  McPherron AC;
XX
DR   WPI; 2000-195289/17.
DR   N-PSDB; AAZ58969.
XX
PT   Preparation of transgenic animal food product useful for treating renal
PT   and muscular disorders, comprises introducing transgene interfering
PT   with expression of growth differentiation factor-11 into embryo  -
XX
PS   Example 3; Fig 1B; 97pp; English.
XX
CC   The invention relates to a method for producing animal food products with
CC   increased ribs content. The method comprises: (a) introducing a transgene
CC   which interferes with expression of growth differentiation factor-11
CC   (GDF-11), into an embryo; (b) allowing the embryo to mature; (c) cross-
CC   breeding the transgene-positive progeny; (d) processing these progeny to
CC   obtain the foodstuff. Modulators of GDF-11 are useful for treating acute
CC   or chronic renal disease, and various other muscle associated disorders
CC   e.g cancer, AIDS; cell proliferative disorders, neurodegenerative
CC   disorders; adipose tissue disorders and immunologic disorders. The animal
CC   food product comprises large amounts of muscle and meagre amounts of fats
CC   and cholesterol, hence useful in treating obesity and related disorders.
CC   The present sequence represents a human GDF-11 polypeptide. The human
CC   GDF-11 gene is described as being located on chromosome 2 in one part and
CC   on chromosome 12 in another part of the specification.
XX
SQ   Sequence   407 AA;

  Query Match             86.4%;  Score 102;  DB 21;  Length 407;
  Best Local Similarity   81.0%;  Pred. No. 5.4e-08;
  Matches   17;  Conservative    3;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           ::|:|||||||||| |||||||
Db     347 YMFMQKYPHTHLVQQANPRGS 367


RESULT 122
AAY77567
ID   AAY77567 standard; Protein; 407 AA.
XX
AC   AAY77567;
XX
DT   08-MAY-2000  (first entry)
XX
DE   Human growth differentiation factor-11 (GDF-11).
XX
KW   Growth differentiation factor-11; GDF-11; renal disease; cancer; human;
KW   muscle associated disorder; AIDS; cell proliferation; immunologic; fat;
KW   neurodegenerative disorder; adipose tissue disorder; animal food; muscle;
KW   obesity; nephrotropic; cytostatic; anti-HIV; anorectic; chromosome 2;
KW   chromosome 12.
```

XX
OS Homo sapiens.
XX
PN WO200006716-A1.
XX
PD 10-FEB-2000.
XX
PF 28-JUL-1999; 99WO-US17252.
XX
PR 28-JUL-1998; 98US-0123929.
XX
PA (UYJO) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI Lee S, McPherron AC;
XX
DR WPI; 2000-195289/17.
XX
PT Preparation of transgenic animal food product useful for treating renal
PT and muscular disorders, comprises introducing transgene interfering
PT with expression of growth differentiation factor-11 into embryo -
XX
PS Example 3; Fig 4A; 97pp; English.
XX
CC The invention relates to a method for producing animal food products with
CC increased ribs content. The method comprises: (a) introducing a transgene
CC which interferes with expression of growth differentiation factor-11
CC (GDF-11), into an embryo; (b) allowing the embryo to mature; (c) cross-
CC breeding the transgene-positive progeny; (d) processing these progeny to
CC obtain the foodstuff. Modulators of GDF-11 are useful for treating acute
CC or chronic renal disease, and various other muscle associated disorders
CC e.g cancer, AIDS; cell proliferative disorders, neurodegenerative
CC disorders; adipose tissue disorders and immunologic disorders. The animal
CC food product comprises large amounts of muscle and meagre amounts of fats
CC and cholesterol, hence useful in treating obesity and related disorders.
CC The present sequence represents a human GDF-11 polypeptide.
XX
SQ Sequence 407 AA;

Query Match 86.4%; Score 102; DB 21; Length 407;
Best Local Similarity 81.0%; Pred. No. 5.4e-08;
Matches 17; Conservative 3; Mismatches 1; Indels 0; Gaps 0;

Qy 1 FVFLQKYPHTHLVHQANPRGS 21
::|:||||||||| |||||||
Db 347 YMFMQKYPHTHLVQQANPRGS 367

RESULT 123
AAE18672
ID AAE18672 standard; Protein; 407 AA.
XX
AC AAE18672;
XX
DT 17-MAY-2002 (first entry)
XX
DE Human growth differentiation factor (GDF-11).
XX
KW Human; promyostatin; myostatin; therapy; amyotrophic lateral sclerosis;
KW neurodegenerative disease; GDF-11; muscular dystrophy; type II diabetes;
KW muscle growth; myostatin prodomain; signal transduction; atherosclerosis;
KW obesity; cachexia; hypertension; myocardial infarction; neuroprotective;
KW muscular dystrophy; muscle wasting disorder; neuromuscular disorder;
KW anorexia; growth differentiation factor; anorectic; immunomodulator;
KW cardiant; metabolic.
XX
OS Homo sapiens.
XX
FH Key Location/Qualifiers
FT Region 299..407
FT /note= "Mature myostatin"
XX
PN WO200209641-A2.
XX
PD 07-FEB-2002.
XX
PF 26-JUL-2001; 2001WO-US23510.
XX
PR 27-JUL-2000; 2000US-0628112.
XX
PA (UYJO) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI Lee S, Mcpherron AC;
XX
DR WPI; 2002-179989/23.
DR N-PSDB; AAD29752.
XX
PT Novel substantially purified promyostatin polypeptide portion
PT (myostatin prodomain or mature myostatin peptide), useful as myostatin
PT signal transduction modulator in muscle cell or adipose tissue, for
PT treating obesity -
XX
PS Example 13; Page 172-173; 175pp; English.
XX
CC The present invention relates to a purified promyostatin polypeptide
CC portion. A myostatin peptide is useful as a target for treatment of
CC neurodegenerative diseases such as amyotrophic lateral sclerosis or
CC muscular dystrophy. A myostatin prodomain inhibits myostatin signal
CC transduction, while mature myostatin peptide referred as myostatin is
CC useful for inducing myostatin signal transduction by interacting
CC specifically with myostatin receptor expressed on the surface of the
CC cell. Modulating myostatin signal transduction is useful for regulating
CC skeletal muscle mass, where promyostatin portion is a negative regulator
CC or muscle growth. Modulating myostatin signal transduction in a muscle
CC cell or adipose tissue is useful for treating pathological conditions
CC associated with myostatin such as obesity and type II diabetes, cachexia,
CC conditions associated with obesity, e.g. atherosclerosis, hypertension,
CC myocardial infarction, muscle wasting disorders such as muscular
CC dystrophy, neuromuscular disorders, or anorexia. Myostatin prodomain is
CC useful for modulating the growth of muscle or adipose tissue in an
CC organism. Myostatin prodomain is useful for increasing muscle mass or
CC reducing fat content of an organism which is useful as a food source, and
CC myostatin peptide is useful for decreasing the growth of muscle tissue in
CC an organism e.g. an organism detrimental to an environment. Mutant
CC promyostatin which has dominant negative activity with respect to
CC myostatin or growth differentiation factor (GDF)-11 is useful for
CC reducing or inhibiting myostatin signal transduction. The present
CC sequence is human GDF-11.
XX
SQ Sequence 407 AA;

Query Match 86.4%; Score 102; DB 23; Length 407;
Best Local Similarity 81.0%; Pred. No. 5.4e-08;
Matches 17; Conservative 3; Mismatches 1; Indels 0; Gaps 0;

Qy 1 FVFLQKYPHTHLVHQANPRGS 21
::|:||||||||| |||||||
Db 347 YMFMQKYPHTHLVQQANPRGS 367

RESULT 124
AAU75633
ID AAU75633 standard; Protein; 407 AA.
XX
AC AAU75633;
XX
DT 21-MAY-2002 (first entry)
XX
DE Human pro-GDF-11.
XX
KW Human; promyostatin; immunomodulator; antidepressant; anorectic;
KW neuroprotective; antidiabetic; growth differentiation factor receptor;
KW myostatin receptor; GDF; muscle tissue; adipose tissue; cachexia;
KW wasting disorder; anorexia; muscular dystrophy; neuromuscular disease;
KW metabolic disorder; obesity; type II diabetes; pro-GDF-11.
XX
OS Homo sapiens.

XX
PN WO200210214-A2.
XX
PD 07-FEB-2002.
XX
PF 26-JUL-2001; 2001WO-US23615.
XX
PR 27-JUL-2000; 2000US-0626896.
XX
PA (UYJO) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI Lee S, McPherron AC;
XX
DR WPI; 2002-217116/27.
DR N-PSDB; ABK15403.
XX
PT New growth differentiation factor (GDF) receptors and modulators,
PT useful for ameliorating wasting disorders such as cachexia, muscular
PT dystrophy or neuromuscular disease or a metabolic disorder such as
PT obesity or type II diabetes -
XX
PS Disclosure; Page 181-182; 184pp; English.
XX
CC The invention relates to a substantially purified growth differentiation
CC factor (GDF) receptor, specifically a myostatin receptor, or its
CC functional peptide portion. Also described is a method of modulating an
CC effect of myostatin on a cell by contacting the cell with an agent that
CC affects myostatin signal transduction in the cell. The method and the
CC receptor are useful for ameliorating the severity of a pathological
CC condition characterised by an abnormal amount, development or metabolic
CC activity of muscle or adipose tissue in a subject, particularly a wasting
CC disorder (e.g. cachexia, anorexia, muscular dystrophy or neuromuscular
CC disease) or a metabolic disorder (e.g. obesity or type II diabetes). The
CC present sequence represents the amino acid sequence of human pro-GDF-11.
XX
SQ Sequence 407 AA;

Query Match 86.4%; Score 102; DB 23; Length 407;
Best Local Similarity 81.0%; Pred. No. 5.4e-08;
Matches 17; Conservative 3; Mismatches 1; Indels 0; Gaps 0;

Qy 1 FVFLQKYPHTHLVHQANPRGS 21
::|:|||||||||| |||||||
Db 347 YMFMQKYPHTHLVQQANPRGS 367

RESULT 125
AAR66148
ID AAR66148 standard; Protein; 52 AA.
XX
AC AAR66148;
XX
DT 10-AUG-1995 (first entry)
XX
DE Partial sequence of human bone morphogenetic protein-11.
XX
KW Bone morphogenetic protein-11; BMP-11; TGF-beta superfamily.
XX
OS Homo sapiens.
XX
PN WO9426892-A.
XX
PD 24-NOV-1994.
XX
PF 12-MAY-1994; 94WO-US05288.
XX
PR 12-MAY-1993; 93US-0061464.
XX
PA (GEMY) GENETICS INST INC.
XX
PI Celeste AJ, Wozney JM;
XX
DR WPI; 1995-006788/01.
DR N-PSDB; AAQ79445.
XX
PT New DNA encoding bone morphogenetic protein 11 - and related
PT vectors, transformed cells and polypeptide(s), including
PT heterodimers, useful e.g. in fertility control bone and tissue
PT repair, etc.
XX
PS Example; Page 42; 57pp; English.
XX
CC Human genomic DNA was amplified using primers C and D (see AAQ79446
CC & AAQ79447) based on an isolated bovine BMP-11 fragment. The
CC product was a 213 bp part of the human gene (AAQ79445). Nts
CC 1-27 or this sequence comprise a portion of primer C and nts
CC 186-213 comprise a portion of primer D, and are therefore not
CC translated. Nts 28-185 can be used as a probe to screen human
CC genomic or cDNA libraries for BMP-11 encoding DNA (see AAQ79443).
XX
SQ Sequence 52 AA;

Query Match 83.9%; Score 99; DB 16; Length 52;
Best Local Similarity 85.0%; Pred. No. 1.5e-08;
Matches 17; Conservative 2; Mismatches 1; Indels 0; Gaps 0;

Qy 2 VFLQKYPHTHLVHQANPRGS 21
:|:|||||||||| |||||||
Db 1 MFMQKYPHTHLVQQANPRGS 20

RESULT 126
AAW40818
ID AAW40818 standard; Protein; 52 AA.
XX
AC AAW40818;
XX
DT 02-APR-1998 (first entry)
XX
DE Human bone morphogenetic protein-11 fragment.
XX
KW Bone-morphogenetic protein-11; BMP-11; inhibin-beta; inhibin-alpha;
KW bone formation; cartilage repair; wound healing; periodontal disease;
KW follicle stimulating hormone regulator; contraception; haematopoiesis;
KW gondal tumour suppressor; therapy; human; probe.
XX
OS Homo sapiens.
XX
PN US5700911-A.
XX
PD 23-DEC-1997.
XX
PF 30-MAY-1995; 95US-0452772.
XX
PR 20-MAY-1994; 94US-0247907.
PR 12-MAY-1993; 93US-0061464.
PR 30-MAY-1995; 95US-0452772.
XX
PA (GEMY) GENETICS INST INC.
XX
PI Celeste AJ, Wozney JM;
XX
DR WPI; 1998-062433/06.
DR N-PSDB; AAV03611.
XX
PT Human and bovine bone morphogenetic protein 11 - useful for inducing
PT bone and cartilage formation
XX
PS Example 2; Column 25-28; 19pp; English.
XX
CC This sequence represents a fragment of the human bone morphogenetic
CC protein-11 (BMP-11) of the invention. The DNA encoding this sequence was
CC used as a probe to isolate the full length human BMP-11 coding sequence
CC shown in AAV03610. The human BMP-11 polypeptide (see AAW40817), mature
CC human BMP-11, or its dimers with other inhibin-beta, inhibin-alpha or
CC bone morphogenetic proteins are useful for inducing bone and/or

```
CC   cartilage formation, e.g. for bone, ligament or cartilage repair, wound
CC   healing or treatment of periodontal disease. BMP-11 may also be useful
CC   for regulating the production of follicle stimulating hormone, for
CC   contraception, to stimulate haematopoiesis, and to suppress the
CC   development of gondal tumours.
XX
SQ   Sequence   52 AA;

  Query Match             83.9%;  Score 99;  DB 19;  Length 52;
  Best Local Similarity   85.0%;  Pred. No. 1.5e-08;
  Matches   17;  Conservative    2;  Mismatches    1;  Indels    0;  Gaps    0;

Qy      2 VFLQKYPHTHLVHQANPRGS 21
          :|:|||||||||| |||||||
Db      1 MFMQKYPHTHLVQQANPRGS 20


RESULT 127
AAY06097
ID   AAY06097 standard; Protein; 52 AA.
XX
AC   AAY06097;
XX
DT   16-AUG-1999  (first entry)
XX
DE   Human activin WC (bone morphogenetic protein 11) polypeptide.
XX
KW   Activin WC; bone morphogenetic protein 11; BMP-11; human;
KW   bone; cartilage; connective tissue; neuronal tissue;
KW   wound healing; tissue repair; vulnerary; contraceptive;
KW   transforming growth factor-beta.
XX
OS   Homo sapiens.
XX
PN   WO9924058-A2.
XX
PD   20-MAY-1999.
XX
PF   06-NOV-1998;   98WO-US23827.
XX
PR   07-NOV-1997;   97US-0966297.
XX
PA   (GEMY ) GENETICS INST INC.
XX
PI   Celeste AJ,  Thies SR,  Wozney JM;
XX
DR   WPI; 1999-327207/27.
DR   N-PSDB; AAX58653.
XX
PT   Administration of human or bovine bone morphogenetic protein 11
XX
PS   Example 2; Page 57; 62pp; English.
XX
CC   This is a partial amino acid sequence of human activin WC, or
CC   bone morphogenetic protein 11 (BMP-11).  A polypeptide including
CC   the full-length mature BMP-11 polypeptide is given in AAY06098.
CC   Human BMP-11 is a member of the transforming growth factor beta
CC   superfamily.  It can be produced by culturing a host cell
CC   transformed with human BMP-11 DNA (see AAX58656).  BMP-11 proteins
CC   may be used to induce bone and/or cartilage formation and in
CC   wound healing and tissue repair, or for augmenting the activity of
CC   other BMP proteins.  BMP-11 may also be useful for regulating the
CC   production of follicle stimulating hormone (e.g. for contraception),
CC   to stimulate haematopoiesis, to suppress the development of gonadal
CC   tumours, and especially (claimed) to induce neuronal cell
CC   formation, growth differentiation, proliferation and maintenance.
XX
SQ   Sequence   52 AA;

  Query Match             83.9%;  Score 99;  DB 20;  Length 52;
  Best Local Similarity   85.0%;  Pred. No. 1.5e-08;
  Matches   17;  Conservative    2;  Mismatches    1;  Indels    0;  Gaps    0;

Qy      2 VFLQKYPHTHLVHQANPRGS 21
          :|:|||||||||| |||||||
Db      1 MFMQKYPHTHLVQQANPRGS 20


RESULT 128
AAY06100
ID   AAY06100 standard; Protein; 52 AA.
XX
AC   AAY06100;
XX
DT   16-AUG-1999  (first entry)
XX
DE   Human activin WC (bone morphogenetic protein 11) polypeptide.
XX
KW   Activin WC; bone morphogenetic protein 11; BMP-11; human;
KW   bone; cartilage; connective tissue; neuronal tissue;
KW   wound healing; tissue repair; vulnerary; contraceptive;
KW   transforming growth factor-beta.
XX
OS   Homo sapiens.
XX
PN   WO9924057-A2.
XX
PD   20-MAY-1999.
XX
PF   23-OCT-1998;   98WO-US22574.
XX
PR   07-NOV-1997;   97US-0966297.
XX
PA   (GEMY ) GENETICS INST INC.
XX
PI   Celeste AJ,  Thies SR,  Wozney JM;
XX
DR   WPI; 1999-337638/28.
DR   N-PSDB; AAX58658.
XX
PT   Modulating neuronal cell development useful for treating
PT   neurodegenerative diseases, neuropathies and nerve resection
XX
PS   Example 2; Page 56; 62pp; English.
XX
CC   This is a partial amino acid sequence of human activin WC, or
CC   bone morphogenetic protein 11 (BMP-11).  A polypeptide including
CC   the full-length mature BMP-11 polypeptide is given in AAY06101.
CC   Human BMP-11 is a member of the transforming growth factor beta
CC   superfamily.  It can be produced by culturing a host cell
CC   transformed with human BMP-11 DNA (see AAX58661).  BMP-11 proteins
CC   may be used to induce bone and/or cartilage formation and in
CC   wound healing and tissue repair, or for augmenting the activity of
CC   other BMP proteins.  BMP-11 may also be useful for regulating the
CC   production of follicle stimulating hormone (e.g. for contraception),
CC   to stimulate haematopoiesis, to suppress the development of gonadal
CC   tumours, and especially (claimed) to induce neuronal cell
CC   formation, growth differentiation, proliferation and maintenance.
XX
SQ   Sequence   52 AA;

  Query Match             83.9%;  Score 99;  DB 20;  Length 52;
  Best Local Similarity   85.0%;  Pred. No. 1.5e-08;
  Matches   17;  Conservative    2;  Mismatches    1;  Indels    0;  Gaps    0;

Qy      2 VFLQKYPHTHLVHQANPRGS 21
          :|:|||||||||| |||||||
Db      1 MFMQKYPHTHLVQQANPRGS 20


RESULT 129
AAM50651
ID   AAM50651 standard; Protein; 52 AA.
XX
AC   AAM50651;
XX
```

```
DT   04-APR-2002  (first entry)
XX
DE   Human bone morphogenetic protein BMP-11 partial sequence.
XX
KW   BMP-11; bone morphogenetic protein-11; activin WC; human;
KW   vulnerary; contraceptive; neuroprotective; antitumour.
XX
OS   Homo sapiens.
XX
PN   US6340668-B1.
XX
PD   22-JAN-2002.
XX
PF   07-OCT-1999;   99US-0414234.
XX
PR   20-MAY-1994;   94US-0247907.
PR   12-AUG-1997;   97US-0919850.
PR   07-NOV-1997;   97US-0966297.
PR   12-MAY-1993;   93US-0061464.
PR   30-MAY-1995;   95US-0452772.
XX
PA   (GEMY ) GENETICS INST INC.
XX
PI   Celeste AJ,  Wozney JM,  Thies RS;
XX
DR   WPI; 2002-138498/18.
DR   N-PSDB; ABA91263.
XX
PT   Promoting the survival and activity of neuronal cells in vivo and in
PT   vitro using bone morphogenetic protein-11  -
XX
PS   Example 2; Column 29-30; 21pp; English.
XX
CC   The present sequence is that of a partial sequence of human
CC   bone morphogenetic protein-11 (BMP-11), as predicted from a partial
CC   DNA sequence (see ABA91263).  The invention provides BMP-11
CC   proteins (see ABA50649-50), processes for producing them, and
CC   recombinant DNA molecules encoding them.  The proteins may be
CC   useful for regulating follicle stimulating hormone, e.g. for
CC   contraception, and for the induction and/or maintenance of bone,
CC   cartilage and/or other connective tissue, and/or neuronal tissue.
XX
SQ   Sequence   52 AA;

  Query Match             83.9%;  Score 99;  DB 23;  Length 52;
  Best Local Similarity   85.0%;  Pred. No. 1.5e-08;
  Matches   17;  Conservative    2;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       2 VFLQKYPHTHLVHQANPRGS 21
           :|:|||||||| |||||||
Db       1 MFMQKYPHTHLVQQANPRGS 20


RESULT 130
AAB13329
ID   AAB13329 standard; Protein; 128 AA.
XX
AC   AAB13329;
XX
DT   12-JAN-2001  (first entry)
XX
DE   Caenorhabditis elegans amino acid sequence.
XX
KW   Caenorhabditis elegans; daf-7; daf-18; insulin signalling pathway;
KW   daf-2; age-1; insulin receptor; PI 3-kinase; PKB kinase;
KW   PTEN lipid phosphatase; antidiabetic; anorectic; obesity; diabetes.
XX
OS   Caenorhabditis elegans.
XX
FH   Key             Location/Qualifiers
FT   Misc-difference 118..119
FT                   /note= "encoded by TGG"
XX
PN   WO200033068-A1.
XX
PD   08-JUN-2000.
XX
PF   02-DEC-1999;   99WO-US28529.
XX
PR   03-DEC-1998;   98US-0205658.
XX
PA   (GEHO ) GEN HOSPITAL CORP.
XX
PI   Ruvkun G,  Ogg S;
XX
DR   WPI; 2000-423022/36.
DR   N-PSDB; AAA91626.
XX
PT   Diagnosing and treating obesity and impaired glucose tolerance using
PT   modulators of daf-18 expression and/or activity -
XX
PS   Disclosure; Fig 47B; 402pp; English.
XX
CC   The present sequence is found in figure 47A and is stated as being the
CC   human DAF-7 homologue. However, in the sequence listing it is given as a
CC   sequence from Caenorhabditis elegans. DAF-7 is one of a number of
CC   C. elegans proteins that have mammalian homologues acting in the insulin
CC   signalling pathway were also identified. The C. elegans age-1 gene
CC   encodes a homologue of the mammalian PI 3-kinase whilst daf-2 encodes a
CC   homologue of the mammalian insulin receptor. The C. elegans AKT
CC   kinase and PKB kinase act downstream of daf-2 and age-1, just as their
CC   mammalian homologues act downstream of insulin signalling. The C. elegans
CC   PTEN lipid phosphatase homologue, DAF-18, has been found to act upstream
CC   of AKT in the pathway. This discovery has enabled mammalian PTEN action
CC   to be mapped to the insulin signalling pathway. Conserved DAF motifs can
CC   be used to design probes to identify mammalian DAF homologues and thus to
CC   identify individuals with a predisposition towards the development of
CC   glucose intolerance conditions, such as obesity and diabetes.
XX
SQ   Sequence   128 AA;

  Query Match             83.1%;  Score 98;  DB 21;  Length 128;
  Best Local Similarity   80.0%;  Pred. No. 6.3e-08;
  Matches   16;  Conservative    3;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRG 20
           ::|:|||||||| ||||||
Db      67 YMFMQKYPHTHLVQQANPRG 86


RESULT 131
AAB73207
ID   AAB73207 standard; Protein; 94 AA.
XX
AC   AAB73207;
XX
DT   11-MAY-2001  (first entry)
XX
DE   Partial cod GDF-8.
XX
KW   Gene therapy; growth differentiation factor-8; GDF-8; AIDS; cachexia;
KW   neurodegenerative disease; amyotrophic lateral sclerosis; obesity;
KW   muscular dystrophy; musculodegenerative disease; tissue repair;
KW   muscle wasting disease; neuromuscular disorder; spinal cord injury;
KW   traumatic injury; congestive obstructive pulmonary disease.
XX
OS   Gadus callarias.
XX
PN   WO200112777-A2.
XX
PD   22-FEB-2001.
XX
PF   17-AUG-2000; 2000WO-US22884.
XX
PR   19-AUG-1999;   99US-0378238.
XX
```

PA (UYJO) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI Lee S, McPherron AC;
XX
DR WPI; 2001-211209/21.
DR N-PSDB; AAF63559.
XX
PT New substantially purified growth differentiation factor-8 polypeptide,
PT useful for treating muscle wasting disease, obesity, muscular
PT dystrophy, neuromuscular disorder, acquired immunodeficiency syndrome
PT and cachexia -
XX
PS Claim 52; Fig 14; 124pp; English.
XX
CC The present invention relates to growth differentiation factor-8 (GDF-8)
CC coding sequences and proteins. The present sequence is a GDF-8 protein,
CC which was isolated in the present invention. GDF-8 is useful for treating
CC neurodegenerative diseases (e.g. amyotrophic lateral sclerosis and
CC muscular dystrophy), musculodegenerative diseases or in tissue repair due
CC to trauma, obesity and disorders related to abnormal proliferation of
CC adipocytes. GDF-8 is also useful for treating malignancies of the various
CC organ systems, particularly cells in muscle or adipose tissues and in
CC gene therapy for the treatment of cell proliferative or immunological
CC diseases mediated by GDF-8. In addition, GDF-8 is also useful for
CC treating muscle wasting disease, neuromuscular disorder, spinal cord
CC injury, traumatic injury, congestive obstructive pulmonary disease
CC (COPD), AIDS or cachexia.
XX
SQ Sequence 94 AA;

Query Match 82.2%; Score 97; DB 22; Length 94;
Best Local Similarity 71.4%; Pred. No. 6.4e-08;
Matches 15; Conservative 6; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FVFLQKYPHTHLVHQANPRGS 21
::: |||||||||||:|:|||:
Db 40 YMYLQKYPHTHLVHKASPRGN 60

RESULT 132
AAB73208
ID AAB73208 standard; Protein; 89 AA.
XX
AC AAB73208;
XX
DT 11-MAY-2001 (first entry)
XX
DE Partial sea bass GDF-8.
XX
KW Gene therapy; growth differentiation factor-8; GDF-8; AIDS; cachexia;
KW neurodegenerative disease; amyotrophic lateral sclerosis; obesity;
KW muscular dystrophy; musculodegenerative disease; tissue repair;
KW muscle wasting disease; neuromuscular disorder; spinal cord injury;
KW traumatic injury; congestive obstructive pulmonary disease.
XX
OS Unidentified.
XX
PN WO200112777-A2.
XX
PD 22-FEB-2001.
XX
PF 17-AUG-2000; 2000WO-US22884.
XX
PR 19-AUG-1999; 99US-0378238.
XX
PA (UYJO) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI Lee S, McPherron AC;
XX
DR WPI; 2001-211209/21.
DR N-PSDB; AAF63560.
XX
PT New substantially purified growth differentiation factor-8 polypeptide,
PT useful for treating muscle wasting disease, obesity, muscular
PT dystrophy, neuromuscular disorder, acquired immunodeficiency syndrome
PT and cachexia -
XX
PS Claim 52; Fig 15; 124pp; English.
XX
CC The present invention relates to growth differentiation factor-8 (GDF-8)
CC coding sequences and proteins. The present sequence is a GDF-8 protein,
CC which was isolated in the present invention. GDF-8 is useful for treating
CC neurodegenerative diseases (e.g. amyotrophic lateral sclerosis and
CC muscular dystrophy), musculodegenerative diseases or in tissue repair due
CC to trauma, obesity and disorders related to abnormal proliferation of
CC adipocytes. GDF-8 is also useful for treating malignancies of the various
CC organ systems, particularly cells in muscle or adipose tissues and in
CC gene therapy for the treatment of cell proliferative or immunological
CC diseases mediated by GDF-8. In addition, GDF-8 is also useful for
CC treating muscle wasting disease, neuromuscular disorder, spinal cord
CC injury, traumatic injury, congestive obstructive pulmonary disease
CC (COPD), AIDS or cachexia.
XX
SQ Sequence 89 AA;

Query Match 77.1%; Score 91; DB 22; Length 89;
Best Local Similarity 71.4%; Pred. No. 5.5e-07;
Matches 15; Conservative 5; Mismatches 1; Indels 0; Gaps 0;

Qy 1 FVFLQKYPHTHLVHQANPRGS 21
:: ||||||||||::|||||:
Db 35 YMHLQKYPHTHLVNKANPRGT 55

RESULT 133
AAB73209
ID AAB73209 standard; Protein; 93 AA.
XX
AC AAB73209;
XX
DT 11-MAY-2001 (first entry)
XX
DE Partial tautog GDF-8.
XX
KW Gene therapy; growth differentiation factor-8; GDF-8; AIDS; cachexia;
KW neurodegenerative disease; amyotrophic lateral sclerosis; obesity;
KW muscular dystrophy; musculodegenerative disease; tissue repair;
KW muscle wasting disease; neuromuscular disorder; spinal cord injury;
KW traumatic injury; congestive obstructive pulmonary disease.
XX
OS Unidentified.
XX
PN WO200112777-A2.
XX
PD 22-FEB-2001.
XX
PF 17-AUG-2000; 2000WO-US22884.
XX
PR 19-AUG-1999; 99US-0378238.
XX
PA (UYJO) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI Lee S, McPherron AC;
XX
DR WPI; 2001-211209/21.
DR N-PSDB; AAF63561.
XX
PT New substantially purified growth differentiation factor-8 polypeptide,
PT useful for treating muscle wasting disease, obesity, muscular
PT dystrophy, neuromuscular disorder, acquired immunodeficiency syndrome
PT and cachexia -
XX
PS Claim 52; Fig 17; 124pp; English.
XX
CC The present invention relates to growth differentiation factor-8 (GDF-8)
CC coding sequences and proteins. The present sequence is a GDF-8 protein,

```
CC   which was isolated in the present invention. GDF-8 is useful for treating
CC   neurodegenerative diseases (e.g. amyotrophic lateral sclerosis and
CC   muscular dystrophy), musculodegenerative diseases or in tissue repair due
CC   to trauma, obesity and disorders related to abnormal proliferation of
CC   adipocytes. GDF-8 is also useful for treating malignancies of the various
CC   organ systems, particularly cells in muscle or adipose tissues and in
CC   gene therapy for the treatment of cell proliferative or immunological
CC   diseases mediated by GDF-8. In addition, GDF-8 is also useful for
CC   treating muscle wasting disease, neuromuscular disorder, spinal cord
CC   injury, traumatic injury, congestive obstructive pulmonary disease
CC   (COPD), AIDS or cachexia.
XX
SQ   Sequence   93 AA;

  Query Match             77.1%;  Score 91;  DB 22;  Length 93;
  Best Local Similarity   71.4%;  Pred. No. 5.8e-07;
  Matches   15;  Conservative    5;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           :: |||||||||::|||||:
Db      39 YMHLQKYPHTHLVNKANPRGT 59


RESULT 134
AAB73198
ID   AAB73198 standard; Protein; 136 AA.
XX
AC   AAB73198;
XX
DT   11-MAY-2001  (first entry)
XX
DE   Salmon GDF-8 encoded by allele 2.
XX
KW   Gene therapy; growth differentiation factor-8; GDF-8; AIDS; cachexia;
KW   neurodegenerative disease; amyotrophic lateral sclerosis; obesity;
KW   muscular dystrophy; musculodegenerative disease; tissue repair;
KW   muscle wasting disease; neuromuscular disorder; spinal cord injury;
KW   traumatic injury; congestive obstructive pulmonary disease.
XX
OS   Oncorhynchus sp.
XX
PN   WO200112777-A2.
XX
PD   22-FEB-2001.
XX
PF   17-AUG-2000; 2000WO-US22884.
XX
PR   19-AUG-1999;   99US-0378238.
XX
PA   (UYJO ) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI   Lee S,  McPherron AC;
XX
DR   WPI; 2001-211209/21.
DR   N-PSDB; AAF63558.
XX
PT   New substantially purified growth differentiation factor-8 polypeptide,
PT   useful for treating muscle wasting disease, obesity, muscular
PT   dystrophy, neuromuscular disorder, acquired immunodeficiency syndrome
PT   and cachexia  -
XX
PS   Claim 52; Fig 2; 124pp; English.
XX
CC   The present invention relates to growth differentiation factor-8 (GDF-8)
CC   coding sequences and proteins. The present sequence is a GDF-8 protein,
CC   which was isolated in the present invention. GDF-8 is useful for treating
CC   neurodegenerative diseases (e.g. amyotrophic lateral sclerosis and
CC   muscular dystrophy), musculodegenerative diseases or in tissue repair due
CC   to trauma, obesity and disorders related to abnormal proliferation of
CC   adipocytes. GDF-8 is also useful for treating malignancies of the various
CC   organ systems, particularly cells in muscle or adipose tissues and in
CC   gene therapy for the treatment of cell proliferative or immunological
CC   diseases mediated by GDF-8. In addition, GDF-8 is also useful for
CC   treating muscle wasting disease, neuromuscular disorder, spinal cord
CC   injury, traumatic injury, congestive obstructive pulmonary disease
CC   (COPD), AIDS or cachexia.
XX
SQ   Sequence   136 AA;

  Query Match             77.1%;  Score 91;  DB 22;  Length 136;
  Best Local Similarity   71.4%;  Pred. No. 8.9e-07;
  Matches   15;  Conservative    5;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           :: |||||||||::|||||:
Db      76 YMHLQKYPHTHLVNKANPRGT 96


RESULT 135
AAE18674
ID   AAE18674 standard; Protein; 136 AA.
XX
AC   AAE18674;
XX
DT   17-MAY-2002  (first entry)
XX
DE   Salmon allele 2 promyostatin, salmon 2.
XX
KW   Salmon; promyostatin; myostatin; therapy; amyotrophic lateral sclerosis;
KW   neurodegenerative disease; GDF-11; muscular dystrophy; type II diabetes;
KW   muscle growth; myostatin prodomain; signal transduction; atherosclerosis;
KW   obesity; cachexia; hypertension; myocardial infarction; neuroprotective;
KW   muscular dystrophy; muscle wasting disorder; neuromuscular disorder;
KW   anorexia; growth differentiation factor; anorectic; immunomodulator;
KW   cardiant; metabolic.
XX
OS   Oncorhynchus sp.
XX
FH   Key             Location/Qualifiers
FT   Region          28..136
FT                   /note= "Mature myostatin; This region is specifically
FT                   claimed in claim 18 of the specification"
XX
PN   WO200209641-A2.
XX
PD   07-FEB-2002.
XX
PF   26-JUL-2001; 2001WO-US23510.
XX
PR   27-JUL-2000; 2000US-0628112.
XX
PA   (UYJO ) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI   Lee S,  Mcpherron AC;
XX
DR   WPI; 2002-179989/23.
DR   N-PSDB; AAD29754.
XX
PT   Novel substantially purified promyostatin polypeptide portion
PT   (myostatin prodomain or mature myostatin peptide), useful as myostatin
PT   signal transduction modulator in muscle cell or adipose tissue, for
PT   treating obesity  -
XX
PS   Claim 7; Page 175; 175pp; English.
XX
CC   The present invention relates to a purified promyostatin polypeptide
CC   portion. A myostatin peptide is useful as a target for treatment of
CC   neurodegenerative diseases such as amyotrophic lateral sclerosis or
CC   muscular dystrophy. A myostatin prodomain inhibits myostatin signal
CC   transduction, while mature myostatin peptide referred as myostatin is
CC   useful for inducing myostatin signal transduction by interacting
CC   specifically with myostatin receptor expressed on the surface of the
CC   cell. Modulating myostatin signal transduction is useful for regulating
CC   skeletal muscle mass, where promyostatin portion is a negative regulator
CC   or muscle growth. Modulating myostatin signal transduction in a muscle
CC   cell or adipose tissue is useful for treating pathological conditions
```

CC associated with myostatin such as obesity and type II diabetes, cachexia,
CC conditions associated with obesity, e.g. atherosclerosis, hypertension,
CC myocardial infarction, muscle wasting disorders such as muscular
CC dystrophy, neuromuscular disorders, or anorexia. Myostatin prodomain is
CC useful for modulating the growth of muscle or adipose tissue in an
CC organism. Myostatin prodomain is useful for increasing muscle mass or
CC reducing fat content of an organism which is useful as a food source, and
CC myostatin peptide is useful for decreasing the growth of muscle tissue in
CC an organism e.g. an organism detrimental to an environment. Mutant
CC promyostatin which has dominant negative activity with respect to
CC myostatin or growth differentiation factor (GDF)-11 is useful for
CC reducing or inhibiting myostatin signal transduction. The present
CC sequence is salmon allele 2 promyostatin, salmon 2.
XX
SQ Sequence 136 AA;

Query Match 77.1%; Score 91; DB 23; Length 136;
Best Local Similarity 71.4%; Pred. No. 8.9e-07;
Matches 15; Conservative 5; Mismatches 1; Indels 0; Gaps 0;

Qy 1 FVFLQKYPHTHLVHQANPRGS 21
:: |||||||||||::|||||:
Db 76 YMHLQKYPHTHLVNKANPRGT 96

RESULT 136
AAU75635
ID AAU75635 standard; Protein; 136 AA.
XX
AC AAU75635;
XX
DT 21-MAY-2002 (first entry)
XX
DE Salmon allele 2 promyostatin.
XX
KW Salmon; promyostatin; immunomodulator; antidepressant; anorectic;
KW neuroprotective; antidiabetic; growth differentiation factor receptor;
KW myostatin receptor; GDF; muscle tissue; adipose tissue; cachexia;
KW wasting disorder; anorexia; muscular dystrophy; neuromuscular disease;
KW metabolic disorder; obesity; type II diabetes.
XX
OS Oncorhynchus sp.
XX
PN WO200210214-A2.
XX
PD 07-FEB-2002.
XX
PF 26-JUL-2001; 2001WO-US23615.
XX
PR 27-JUL-2000; 2000US-0626896.
XX
PA (UYJO) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI Lee S, McPherron AC;
XX
DR WPI; 2002-217116/27.
DR N-PSDB; ABK15405.
XX
PT New growth differentiation factor (GDF) receptors and modulators,
PT useful for ameliorating wasting disorders such as cachexia, muscular
PT dystrophy or neuromuscular disease or a metabolic disorder such as
PT obesity or type II diabetes -
XX
PS Disclosure; Fig 2; 184pp; English.
XX
CC The invention relates to a substantially purified growth differentiation
CC factor (GDF) receptor, specifically a myostatin receptor, or its
CC functional peptide portion. Also described is a method of modulating an
CC effect of myostatin on a cell by contacting the cell with an agent that
CC affects myostatin signal transduction in the cell. The method and the
CC receptor are useful for ameliorating the severity of a pathological
CC condition characterised by an abnormal amount, development or metabolic
CC activity of muscle or adipose tissue in a subject, particularly a wasting
CC disorder (e.g. cachexia, anorexia, muscular dystrophy or neuromuscular
CC disease) or a metabolic disorder (e.g. obesity or type II diabetes). The
CC present sequence represents the amino acid sequence of salmon allele 2
CC promyostatin.
XX
SQ Sequence 136 AA;

Query Match 77.1%; Score 91; DB 23; Length 136;
Best Local Similarity 71.4%; Pred. No. 8.9e-07;
Matches 15; Conservative 5; Mismatches 1; Indels 0; Gaps 0;

Qy 1 FVFLQKYPHTHLVHQANPRGS 21
:: |||||||||||::|||||:
Db 76 YMHLQKYPHTHLVNKANPRGT 96

RESULT 137
AAB73197
ID AAB73197 standard; Protein; 157 AA.
XX
AC AAB73197;
XX
DT 11-MAY-2001 (first entry)
XX
DE Salmon GDF-8 encoded by allele 1.
XX
KW Gene therapy; growth differentiation factor-8; GDF-8; AIDS; cachexia;
KW neurodegenerative disease; amyotrophic lateral sclerosis; obesity;
KW muscular dystrophy; musculodegenerative disease; tissue repair;
KW muscle wasting disease; neuromuscular disorder; spinal cord injury;
KW traumatic injury; congestive obstructive pulmonary disease.
XX
OS Oncorhynchus sp.
XX
PN WO200112777-A2.
XX
PD 22-FEB-2001.
XX
PF 17-AUG-2000; 2000WO-US22884.
XX
PR 19-AUG-1999; 99US-0378238.
XX
PA (UYJO) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI Lee S, McPherron AC;
XX
DR WPI; 2001-211209/21.
DR N-PSDB; AAF63557.
XX
PT New substantially purified growth differentiation factor-8 polypeptide,
PT useful for treating muscle wasting disease, obesity, muscular
PT dystrophy, neuromuscular disorder, acquired immunodeficiency syndrome
PT and cachexia -
XX
PS Claim 52; Fig 2; 124pp; English.
XX
CC The present invention relates to growth differentiation factor-8 (GDF-8)
CC coding sequences and proteins. The present sequence is a GDF-8 protein,
CC which was isolated in the present invention. GDF-8 is useful for treating
CC neurodegenerative diseases (e.g. amyotrophic lateral sclerosis and
CC muscular dystrophy), musculodegenerative diseases or in tissue repair due
CC to trauma, obesity and disorders related to abnormal proliferation of
CC adipocytes. GDF-8 is also useful for treating malignancies of the various
CC organ systems, particularly cells in muscle or adipose tissues and in
CC gene therapy for the treatment of cell proliferative or immunological
CC diseases mediated by GDF-8. In addition, GDF-8 is also useful for
CC treating muscle wasting disease, neuromuscular disorder, spinal cord
CC injury, traumatic injury, congestive obstructive pulmonary disease
CC (COPD), AIDS or cachexia.
XX
SQ Sequence 157 AA;

Query Match 77.1%; Score 91; DB 22; Length 157;

```
  Best Local Similarity   71.4%;  Pred. No. 1e-06;
  Matches   15;  Conservative    5;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           :: |||||||||::|||||:
Db      97 YMHLQKYPHTHLVNKANPRGT 117


RESULT 138
AAE18673
ID   AAE18673 standard; Protein; 157 AA.
XX
AC   AAE18673;
XX
DT   17-MAY-2002  (first entry)
XX
DE   Salmon allele 1 promyostatin, salmon 1.
XX
KW   Salmon; promyostatin; myostatin; therapy; amyotrophic lateral sclerosis;
KW   neurodegenerative disease; GDF-11; muscular dystrophy; type II diabetes;
KW   muscle growth; myostatin prodomain; signal transduction; atherosclerosis;
KW   obesity; cachexia; hypertension; myocardial infarction; neuroprotective;
KW   muscular dystrophy; muscle wasting disorder; neuromuscular disorder;
KW   anorexia; growth differentiation factor; anorectic; immunomodulator;
KW   cardiant; metabolic.
XX
OS   Oncorhynchus sp.
XX
FH   Key             Location/Qualifiers
FT   Region          49..157
FT                   /note= "Mature myostatin; This region is specifically
FT                   claimed in claim 18 of the specification"
XX
PN   WO200209641-A2.
XX
PD   07-FEB-2002.
XX
PF   26-JUL-2001; 2001WO-US23510.
XX
PR   27-JUL-2000; 2000US-0628112.
XX
PA   (UYJO ) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI   Lee S,  Mcpherron AC;
XX
DR   WPI; 2002-179989/23.
DR   N-PSDB; AAD29753.
XX
PT   Novel substantially purified promyostatin polypeptide portion
PT   (myostatin prodomain or mature myostatin peptide), useful as myostatin
PT   signal transduction modulator in muscle cell or adipose tissue, for
PT   treating obesity  -
XX
PS   Claim 7; Page 174; 175pp; English.
XX
CC   The present invention relates to a purified promyostatin polypeptide
CC   portion. A myostatin peptide is useful as a target for treatment of
CC   neurodegenerative diseases such as amyotrophic lateral sclerosis or
CC   muscular dystrophy. A myostatin prodomain inhibits myostatin signal
CC   transduction, while mature myostatin peptide referred as myostatin is
CC   useful for inducing myostatin signal transduction by interacting
CC   specifically with myostatin receptor expressed on the surface of the
CC   cell. Modulating myostatin signal transduction is useful for regulating
CC   skeletal muscle mass, where promyostatin portion is a negative regulator
CC   or muscle growth. Modulating myostatin signal transduction in a muscle
CC   cell or adipose tissue is useful for treating pathological conditions
CC   associated with myostatin such as obesity and type II diabetes, cachexia,
CC   conditions associated with obesity, e.g. atherosclerosis, hypertension,
CC   myocardial infarction, muscle wasting disorders such as muscular
CC   dystrophy, neuromuscular disorders, or anorexia. Myostatin prodomain is
CC   useful for modulating the growth of muscle or adipose tissue in an
CC   organism. Myostatin prodomain is useful for increasing muscle mass or
CC   reducing fat content of an organism which is useful as a food source, and
CC   myostatin peptide is useful for decreasing the growth of muscle tissue in
CC   an organism e.g. an organism detrimental to an environment. Mutant
CC   promyostatin which has dominant negative activity with respect to
CC   myostatin or growth differentiation factor (GDF)-11 is useful for
CC   reducing or inhibiting myostatin signal transduction. The present
CC   sequence is salmon allele 1 promyostatin, salmon 1.
XX
SQ   Sequence   157 AA;

  Query Match             77.1%;  Score 91;  DB 23;  Length 157;
  Best Local Similarity   71.4%;  Pred. No. 1e-06;
  Matches   15;  Conservative    5;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           :: |||||||||::|||||:
Db      97 YMHLQKYPHTHLVNKANPRGT 117


RESULT 139
AAU75634
ID   AAU75634 standard; Protein; 157 AA.
XX
AC   AAU75634;
XX
DT   21-MAY-2002  (first entry)
XX
DE   Salmon allele 1 promyostatin.
XX
KW   Salmon; promyostatin; immunomodulator; antidepressant; anorectic;
KW   neuroprotective; antidiabetic; growth differentiation factor receptor;
KW   myostatin receptor; GDF; muscle tissue; adipose tissue; cachexia;
KW   wasting disorder; anorexia; muscular dystrophy; neuromuscular disease;
KW   metabolic disorder; obesity; type II diabetes.
XX
OS   Oncorhynchus sp.
XX
PN   WO200210214-A2.
XX
PD   07-FEB-2002.
XX
PF   26-JUL-2001; 2001WO-US23615.
XX
PR   27-JUL-2000; 2000US-0626896.
XX
PA   (UYJO ) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI   Lee S,  McPherron AC;
XX
DR   WPI; 2002-217116/27.
DR   N-PSDB; ABK15404.
XX
PT   New growth differentiation factor (GDF) receptors and modulators,
PT   useful for ameliorating wasting disorders such as cachexia, muscular
PT   dystrophy or neuromuscular disease or a metabolic disorder such as
PT   obesity or type II diabetes -
XX
PS   Disclosure; Fig 2; 184pp; English.
XX
CC   The invention relates to a substantially purified growth differentiation
CC   factor (GDF) receptor, specifically a myostatin receptor, or its
CC   functional peptide portion. Also described is a method of modulating an
CC   effect of myostatin on a cell by contacting the cell with an agent that
CC   affects myostatin signal transduction in the cell. The method and the
CC   receptor are useful for ameliorating the severity of a pathological
CC   condition characterised by an abnormal amount, development or metabolic
CC   activity of muscle or adipose tissue in a subject, particularly a wasting
CC   disorder (e.g. cachexia, anorexia, muscular dystrophy or neuromuscular
CC   disease) or a metabolic disorder (e.g. obesity or type II diabetes). The
CC   present sequence represents the amino acid sequence of salmon allele 1
CC   promyostatin.
XX
SQ   Sequence   157 AA;
```

```
  Query Match             77.1%;  Score 91;  DB 23;  Length 157;
  Best Local Similarity   71.4%;  Pred. No. 1e-06;
  Matches   15;  Conservative    5;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           :: |||||||||||::|||||:
Db      97 YMHLQKYPHTHLVNKANPRGT 117


RESULT 140
AAY33939
ID   AAY33939 standard; peptide; 374 AA.
XX
AC   AAY33939;
XX
DT   09-NOV-1999  (first entry)
XX
DE   Amino acid sequence of zebrafish myostatin.
XX
KW   Myostatin; mouse; rabbit; human; baboon; bovine; porcine; ovine; chick;
KW   turkey; zebrafish; immune response; vaccine; body weight; muscle mass;
KW   mammary gland tissue; lactation; feed uptake; muscle degeneration; GDF11.
XX
OS   Brachydanio rerio.
XX
PN   WO9942573-A1.
XX
PD   26-AUG-1999.
XX
PF   19-FEB-1999;   99WO-CA00128.
XX
PR   19-FEB-1998;   98US-0075213.
XX
PA   (BIOS-) BIOSTAR INC.
XX
PI   Barker CA,  Morsey M;
XX
DR   WPI; 1999-527471/44.
XX
PT   New myostatin peptide, multimers and immunoconjugates for eliciting
PT   an immune response in a vertebrate against a myostatin immunogen
XX
PS   Claim 4; Fig 1A-D; 109pp; English.
XX
CC   The invention provides myostatin peptides consisting of 3-100 amino
CC   acids, derived from a region of mouse, rabbit, human, baboon, bovine,
CC   porcine, ovine, chick, turkey or zebrafish myostatin (see sequences
CC   AAY33930-939). The myostatin peptides are derived preferably from a
CC   region of amino acid residues 1-275, 25-300, 50-325 or 75-350 of the
CC   above sequences. The peptides and the nucleic acids encoding the peptides
CC   are useful as vaccines for eliciting an immune response in a vertebrate
CC   against a myostatin immunogen. They result in increasing body weight,
CC   muscle mass, number and size of muscle cells, muscle strength, mammary
CC   gland tissue, lactation, appetite or feed uptake, life span of the
CC   vertebrate, and cause a reduction in body fat content, useful for muscle
CC   wasting conditions. The vaccines are also useful for treating a disorder
CC   which comprises degeneration or wasting of muscle in a vertebrate, and
CC   useful for modulating GDF11 activity. The present sequence represents
CC   a zebrafish myostatin seqeunce.
XX
SQ   Sequence   374 AA;

  Query Match             76.3%;  Score 90;  DB 20;  Length 374;
  Best Local Similarity   66.7%;  Pred. No. 4.1e-06;
  Matches   14;  Conservative    7;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           :::|||||||||||::|:|||:
Db     314 YMYLQKYPHTHLVNKASPRGT 334


RESULT 141
AAB73196
ID   AAB73196 standard; Protein; 374 AA.
XX
AC   AAB73196;
XX
DT   11-MAY-2001  (first entry)
XX
DE   Zebrafish GDF-8.
XX
KW   Gene therapy; growth differentiation factor-8; GDF-8; AIDS; cachexia;
KW   neurodegenerative disease; amyotrophic lateral sclerosis; obesity;
KW   muscular dystrophy; musculodegenerative disease; tissue repair;
KW   muscle wasting disease; neuromuscular disorder; spinal cord injury;
KW   traumatic injury; congestive obstructive pulmonary disease.
XX
OS   Brachydanio rerio.
XX
PN   WO200112777-A2.
XX
PD   22-FEB-2001.
XX
PF   17-AUG-2000; 2000WO-US22884.
XX
PR   19-AUG-1999;   99US-0378238.
XX
PA   (UYJO ) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI   Lee S,  McPherron AC;
XX
DR   WPI; 2001-211209/21.
DR   N-PSDB; AAF63556.
XX
PT   New substantially purified growth differentiation factor-8 polypeptide,
PT   useful for treating muscle wasting disease, obesity, muscular
PT   dystrophy, neuromuscular disorder, acquired immunodeficiency syndrome
PT   and cachexia  -
XX
PS   Claim 52; Fig 2; 124pp; English.
XX
CC   The present invention relates to growth differentiation factor-8 (GDF-8)
CC   coding sequences and proteins. The present sequence is a GDF-8 protein,
CC   which was isolated in the present invention. GDF-8 is useful for treating
CC   neurodegenerative diseases (e.g. amyotrophic lateral sclerosis and
CC   muscular dystrophy), musculodegenerative diseases or in tissue repair due
CC   to trauma, obesity and disorders related to abnormal proliferation of
CC   adipocytes. GDF-8 is also useful for treating malignancies of the various
CC   organ systems, particularly cells in muscle or adipose tissues and in
CC   gene therapy for the treatment of cell proliferative or immunological
CC   diseases mediated by GDF-8. In addition, GDF-8 is also useful for
CC   treating muscle wasting disease, neuromuscular disorder, spinal cord
CC   injury, traumatic injury, congestive obstructive pulmonary disease
CC   (COPD), AIDS or cachexia.
XX
SQ   Sequence   374 AA;

  Query Match             76.3%;  Score 90;  DB 22;  Length 374;
  Best Local Similarity   66.7%;  Pred. No. 4.1e-06;
  Matches   14;  Conservative    7;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           :::|||||||||||::|:|||:
Db     314 YMYLQKYPHTHLVNKASPRGT 334


RESULT 142
AAB20139
ID   AAB20139 standard; Protein; 374 AA.
XX
AC   AAB20139;
XX
DT   30-APR-2001  (first entry)
XX
DE   Danio rerio growth differentiation factor 8.
XX
```

KW Growth differentiation factor 8; GDF-8; myostatin; down-regulation;
KW vaccine; muscle; meat; cachexia; cardiant.
XX
OS Danio rerio.
XX
PN WO200105820-A2.
XX
PD 25-JAN-2001.
XX
PF 20-JUL-2000; 2000WO-DK00413.
XX
PR 20-JUL-1999; 99DK-0001014.
PR 26-JUL-1999; 99US-0145275.
XX
PA (MEBI-) M & E BIOTECH AS.
XX
PI Halkier T, Mouritsen S, Klysner S;
XX
DR WPI; 2001-112680/12.
XX
PT Increasing the muscle mass of animals used in meat production by down
PT regulating growth differentiation factor 8 (GDF-8) activity in the
PT animal through induction of anti-GDF-8 antibody production -
XX
PS Example 1; Page 89-91; 110pp; English.
XX
CC The present sequence is that of Danio rerio growth differentiation
CC factor 8 (GDF-8), or myostatin. It is an object of the invention
CC to produce a recombinant therapeutic vaccine capable of effecting
CC down-regulation of GDF-8 in order to increase the muscle growth
CC rate of farm animals. Variants of GDF-8 (see AAB20145-53) are
CC provided that are capable of breaking autotolerance against
CC autologous GDF-8. These comprise a C-terminal portion of human
CC GDF-8 in which a portion of the native sequence is replaced by a
CC T-cell epitope such as the promiscuous tetanus toxin T-cell epitope
CC P2 or P30. Nucleic acids encoding the GDF-8 variants can be used
CC for genetic immunisation of the animals. Down-regulation of GDF-8
CC activity is used to increase muscle mass by up to at least 45%
CC in cattle, pigs and poultry used for meat production, reducing the
CC need for antibiotic feed-additives. Anti-GDF8 vaccines can be used
CC to treat human diseases such as cancer cachexia where muscle atrophy
CC is pronounced and for patients suffering from acute and chronic
CC heart failure.
XX
SQ Sequence 374 AA;

Query Match 76.3%; Score 90; DB 22; Length 374;
Best Local Similarity 66.7%; Pred. No. 4.1e-06;
Matches 14; Conservative 7; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FVFLQKYPHTHLVHQANPRGS 21
:::|||||||||::|:|||:
Db 314 YMYLQKYPHTHLVNKASPRGT 334

RESULT 143
AAE18668
ID AAE18668 standard; Protein; 374 AA.
XX
AC AAE18668;
XX
DT 17-MAY-2002 (first entry)
XX
DE Zebra fish promyostatin.
XX
KW Promyostatin; myostatin; therapy; amyotrophic lateral sclerosis;
KW neurodegenerative disease; GDF-11; muscular dystrophy; type II diabetes;
KW muscle growth; myostatin prodomain; signal transduction; atherosclerosis;
KW obesity; cachexia; hypertension; myocardial infarction; neuroprotective;
KW muscular dystrophy; muscle wasting disorder; neuromuscular disorder;
KW anorexia; growth differentiation factor; anorectic; immunomodulator;
KW cardiant; metabolic; zebra fish.
XX
OS Danio rerio.
XX
FH Key Location/Qualifiers
FT Domain 20..262
FT /note= "Myostatin prodomain; This region is specifically
FT claimed in claim 12 of the specification"
FT Region 267..374
FT /note= "Mature myostatin; This region is specifically
FT claimed in claim 17 of the specification"
XX
PN WO200209641-A2.
XX
PD 07-FEB-2002.
XX
PF 26-JUL-2001; 2001WO-US23510.
XX
PR 27-JUL-2000; 2000US-0628112.
XX
PA (UYJO) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI Lee S, Mcpherron AC;
XX
DR WPI; 2002-179989/23.
DR N-PSDB; AAD29751.
XX
PT Novel substantially purified promyostatin polypeptide portion
PT (myostatin prodomain or mature myostatin peptide), useful as myostatin
PT signal transduction modulator in muscle cell or adipose tissue, for
PT treating obesity -
XX
PS Claim 6; Page 168-169; 175pp; English.
XX
CC The present invention relates to a purified promyostatin polypeptide
CC portion. A myostatin peptide is useful as a target for treatment of
CC neurodegenerative diseases such as amyotrophic lateral sclerosis or
CC muscular dystrophy. A myostatin prodomain inhibits myostatin signal
CC transduction, while mature myostatin peptide referred as myostatin is
CC useful for inducing myostatin signal transduction by interacting
CC specifically with myostatin receptor expressed on the surface of the
CC cell. Modulating myostatin signal transduction is useful for regulating
CC skeletal muscle mass, where promyostatin portion is a negative regulator
CC or muscle growth. Modulating myostatin signal transduction in a muscle
CC cell or adipose tissue is useful for treating pathological conditions
CC associated with myostatin such as obesity and type II diabetes, cachexia,
CC conditions associated with obesity, e.g. atherosclerosis, hypertension,
CC myocardial infarction, muscle wasting disorders such as muscular
CC dystrophy, neuromuscular disorders, or anorexia. Myostatin prodomain is
CC useful for modulating the growth of muscle or adipose tissue in an
CC organism. Myostatin prodomain is useful for increasing muscle mass or
CC reducing fat content of an organism which is useful as a food source, and
CC myostatin peptide is useful for decreasing the growth of muscle tissue in
CC an organism e.g. an organism detrimental to an environment. Mutant
CC promyostatin which has dominant negative activity with respect to
CC myostatin or growth differentiation factor (GDF)-11 is useful for
CC reducing or inhibiting myostatin signal transduction. The present
CC sequence is zebra fish promyostatin.
XX
SQ Sequence 374 AA;

Query Match 76.3%; Score 90; DB 23; Length 374;
Best Local Similarity 66.7%; Pred. No. 4.1e-06;
Matches 14; Conservative 7; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FVFLQKYPHTHLVHQANPRGS 21
:::|||||||||::|:|||:
Db 314 YMYLQKYPHTHLVNKASPRGT 334

RESULT 144
AAU75629
ID AAU75629 standard; Protein; 374 AA.
XX
AC AAU75629;

XX
DT 21-MAY-2002 (first entry)
XX
DE Zebrafish promyostatin.
XX
KW Zebrafish; promyostatin; immunomodulator; antidepressant; anorectic;
KW neuroprotective; antidiabetic; growth differentiation factor receptor;
KW myostatin receptor; GDF; muscle tissue; adipose tissue; cachexia;
KW wasting disorder; anorexia; muscular dystrophy; neuromuscular disease;
KW metabolic disorder; obesity; type II diabetes.
XX
OS Brachydanio rerio.
XX
PN WO200210214-A2.
XX
PD 07-FEB-2002.
XX
PF 26-JUL-2001; 2001WO-US23615.
XX
PR 27-JUL-2000; 2000US-0626896.
XX
PA (UYJO) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI Lee S, McPherron AC;
XX
DR WPI; 2002-217116/27.
DR N-PSDB; ABK15402.
XX
PT New growth differentiation factor (GDF) receptors and modulators,
PT useful for ameliorating wasting disorders such as cachexia, muscular
PT dystrophy or neuromuscular disease or a metabolic disorder such as
PT obesity or type II diabetes -
XX
PS Claim 22; Fig 1; 184pp; English.
XX
CC The invention relates to a substantially purified growth differentiation
CC factor (GDF) receptor, specifically a myostatin receptor, or its
CC functional peptide portion. Also described is a method of modulating an
CC effect of myostatin on a cell by contacting the cell with an agent that
CC affects myostatin signal transduction in the cell. The method and the
CC receptor are useful for ameliorating the severity of a pathological
CC condition characterised by an abnormal amount, development or metabolic
CC activity of muscle or adipose tissue in a subject, particularly a wasting
CC disorder (e.g. cachexia, anorexia, muscular dystrophy or neuromuscular
CC disease) or a metabolic disorder (e.g. obesity or type II diabetes). The
CC present sequence represents the amino acid sequence of zebrafish
CC promyostatin.
XX
SQ Sequence 374 AA;

Query Match 76.3%; Score 90; DB 23; Length 374;
Best Local Similarity 66.7%; Pred. No. 4.1e-06;
Matches 14; Conservative 7; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FVFLQKYPHTHLVHQANPRGS 21
::: ::::::::::::: : ::: :
Db 314 YMYLQKYPHTHLVNKASPRGT 334

RESULT 145
AAB21078
ID AAB21078 standard; Protein; 23 AA.
XX
AC AAB21078;
XX
DT 19-DEC-2000 (first entry)
XX
DE GDF-8 inhibitory peptide fragment, SEQ ID NO:25.
XX
KW GDF-8; growth differentiation factor-8; myostatin; mouse; murine;
KW human; activity inhibitor; muscle-associated disorder; cancer;
KW muscular dystrophy; spinal cord injury; traumatic injury;
KW congestive obstructive pulmonary disease; AIDS; cachexia;
KW adipocyte proliferative disorder; obesity; glucose transport modulation;
KW diabetes.
XX
OS Homo sapiens.
OS Mus sp.
XX
PN WO200043781-A2.
XX
PD 27-JUL-2000.
XX
PF 21-JAN-2000; 2000WO-US01552.
XX
PR 21-JAN-1999; 99US-0116639.
PR 10-JUN-1999; 99US-0138363.
XX
PA (META-) METAMORPHIX INC.
XX
PI Topouzis S, Wright JF, Ratovitski T, Liang L, Brady JL, Sinha D;
PI Yaswen-Corkery L;
XX
DR WPI; 2000-505849/45.
XX
PT Novel method for identifying inhibitors of growth differentiation
PT factor (GDF) proteins which used to treat a variety of diseases -
XX
PS Claim 51; Page 19; 122pp; English.
XX
CC Sequences AAB21078 and AAB21082-B21083 represent GDF-8 (growth
CC differentiation factor-8) peptide fragments which act as inhibitors of
CC GDF-8 activity. The invention relates to inhibitors of GDFs, and methods
CC of identifying such inhibitors. The GDF inhibitors of the invention
CC encompass GDF-specific ribozymes (AAA90265- AAA90268 and
CC AAA90294-A90297), GDF-8 antisense oligonucleotides (AAA90269-A90288), and
CC GDF protein fragments or variants (AAB21078, AAB21082-B21083 and
CC AAB21085-B21086). The methods are used to identify inhibitors of GDF
CC proteins, especially GDF-8 (also known as myostatin) and GDF-11. The
CC inhibitors can be used to modulate GDF-8 or GDF-11 activity or
CC expression. They can be used to treat diseases or disorders characterised
CC by aberrant expression of GDF-8 or GDF-11, such as muscle-associated
CC disorders including cancer, muscular dystrophy, spinal cord injury,
CC traumatic injury, congestive obstructive pulmonary disease, AIDS and
CC cachexia, and may also be used to treat obesity and other disorders
CC related to abnormal proliferation of adipocytes. They may also be used
CC to treat diabetes via the modulation of glucose transport (e.g., by
CC increasing the activity of the GLUT4 glucose transporter).
XX
SQ Sequence 23 AA;

Query Match 68.6%; Score 81; DB 21; Length 23;
Best Local Similarity 100.0%; Pred. No. 4.7e-06;
Matches 14; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FVFLQKYPHTHLVH 14
||||||||||||||
Db 10 FVFLQKYPHTHLVH 23

RESULT 146
ABG28970
ID ABG28970 standard; Protein; 489 AA.
XX
AC ABG28970;
XX
DT 18-FEB-2002 (first entry)
XX
DE Novel human diagnostic protein #28961.
XX
KW Human; chromosome mapping; gene mapping; gene therapy; forensic;
KW food supplement; medical imaging; diagnostic; genetic disorder.
XX
OS Homo sapiens.
XX
PN WO200175067-A2.

```
XX
PD   11-OCT-2001.
XX
PF   30-MAR-2001; 2001WO-US08631.
XX
PR   31-MAR-2000; 2000US-0540217.
PR   23-AUG-2000; 2000US-0649167.
XX
PA   (HYSE-) HYSEQ INC.
XX
PI   Drmanac RT,  Liu C,  Tang YT;
XX
DR   WPI; 2001-639362/73.
DR   N-PSDB; AAS93157.
XX
PT   New isolated polynucleotide and encoded polypeptides, useful in
PT   diagnostics, forensics, gene mapping, identification of mutations
PT   responsible for genetic disorders or other traits and to assess
PT   biodiversity  -
XX
PS   Claim 20; SEQ ID No 59329; 103pp; English.
XX
CC   The invention relates to isolated polynucleotide (I) and
CC   polypeptide (II) sequences. (I) is useful as hybridisation probes,
CC   polymerase chain reaction (PCR) primers, oligomers, and for chromosome
CC   and gene mapping, and in recombinant production of (II). The
CC   polynucleotides are also used in diagnostics as expressed sequence tags
CC   for identifying expressed genes. (I) is useful in gene therapy techniques
CC   to restore normal activity of (II) or to treat disease states involving
CC   (II). (II) is useful for generating antibodies against it, detecting or
CC   quantitating a polypeptide in tissue, as molecular weight markers and as
CC   a food supplement. (II) and its binding partners are useful in medical
CC   imaging of sites expressing (II). (I) and (II) are useful for treating
CC   disorders involving aberrant protein expression or biological activity.
CC   The polypeptide and polynucleotide sequences have applications in
CC   diagnostics, forensics, gene mapping, identification of mutations
CC   responsible for genetic disorders or other traits to assess biodiversity
CC   and to produce other types of data and products dependent on DNA and
CC   amino acid sequences. ABG00010-ABG30377 represent novel human
CC   diagnostic amino acid sequences of the invention.
CC   Note: The sequence data for this patent did not appear in the printed
CC   specification, but was obtained in electronic format directly from WIPO
CC   at ftp.wipo.int/pub/published_pct_sequences.
XX
SQ   Sequence   489 AA;

  Query Match             46.6%;  Score 55;  DB 22;  Length 489;
  Best Local Similarity   47.4%;  Pred. No. 2.3;
  Matches    9;  Conservative    3;  Mismatches    7;  Indels    0;  Gaps    0;

Qy       3 FLQKYPHTHLVHQANPRGS 21
           : : |||  |:||||   |
Db      61 YAENYPHVRLLHQANAGAS 79


RESULT 147
ABP40788
ID   ABP40788 standard; Protein; 358 AA.
XX
AC   ABP40788;
XX
DT   24-JUL-2002  (first entry)
XX
DE   Staphylococcus epidermidis ORF amino acid sequence SEQ ID NO:5633.
XX
KW   Staphylococcus epidermidis; open reading frame; ORF; bacterial infection;
KW   antibacterial; gene therapy.
XX
OS   Staphylococcus epidermidis.
XX
PN   US6380370-B1.
XX
PD   30-APR-2002.
XX
PF   13-AUG-1998;   98US-0134001.
XX
PR   14-AUG-1997;   97US-055779P.
PR   08-NOV-1997;   97US-064964P.
XX
PA   (GENO-) GENOME THERAPEUTICS CORP.
XX
PI   Doucette-Stamm LA,  Bush D;
XX
DR   WPI; 2002-381255/41.
DR   N-PSDB; ABN93333.
XX
PT   Novel isolated nucleic acid encoding a Staphylococcus epidermidis
PT   polypeptide, useful for diagnosing and treating bacterial infections -
XX
PS   Disclosure; SEQ ID 5633; 267pp; English.
XX
CC   ABN90538 to ABN93374 represent Staphylococcus epidermidis open reading
CC   frame (ORF) nucleic acid sequences which encode the amino acid sequences
CC   given in ABP35124 to ABP37960. The S. epidermidis sequences have
CC   antibacterial activity and can be used in gene therapy. The sequences
CC   can also be used in the diagnosis and treatment of bacterial infections,
CC   particularly S. epidermidis infections. The sequences can be used to
CC   screen for compounds able to interfere with the S. epidermidis life
CC   cycle or inhibit S. epidermidis infection.
CC   N.B. The sequence data for this patent did not form part of the printed
CC   specification, but was obtained in electronic format directly from the
CC   USPTO web site.
XX
SQ   Sequence   358 AA;

  Query Match             41.5%;  Score 49;  DB 23;  Length 358;
  Best Local Similarity   53.8%;  Pred. No. 15;
  Matches    7;  Conservative    4;  Mismatches    2;  Indels    0;  Gaps    0;

Qy       5 QKYPHTHLVHQAN 17
           ||:||  ::||:|
Db      55 QKHPHIKVIHQSN 67


RESULT 148
ABB61203
ID   ABB61203 standard; Protein; 403 AA.
XX
AC   ABB61203;
XX
DT   26-MAR-2002  (first entry)
XX
DE   Drosophila melanogaster polypeptide SEQ ID NO 10401.
XX
KW   Drosophila; developmental biology; cell signalling; insecticide;
KW   pharmaceutical.
XX
OS   Drosophila melanogaster.
XX
PN   WO200171042-A2.
XX
PD   27-SEP-2001.
XX
PF   23-MAR-2001; 2001WO-US09231.
XX
PR   23-MAR-2000; 2000US-191637P.
PR   11-JUL-2000; 2000US-0614150.
XX
PA   (PEKE ) PE CORP NY.
XX
PI   Venter JC,  Adams M,  Li PWD,  Myers EW;
XX
DR   WPI; 2001-656860/75.
DR   N-PSDB; ABL05306.
XX
PT   New isolated nucleic acid detection reagent for detecting 1000 or more
```

```
PT   genes from Drosophila and for elucidating cell signalling and cell-cell
PT   interactions -
XX
PS   Disclosure; SEQ ID NO 10401; 21pp + Sequence Listing; English.
XX
CC   The invention relates to an isolated nucleic acid detection reagent
CC   capable of detecting 1000 or more genes from Drosophila. The invention is
CC   useful in developmental biology and in elucidating cell signalling and
CC   cell-cell interactions in higher eukaryotes for the development of
CC   insecticides, therapeutics and pharmaceutical drugs. The invention
CC   discloses genomic DNA sequences (ABL16176-ABL30511), expressed DNA
CC   sequences (ABL01840-ABL16175) and the encoded proteins
CC   (ABB57737-ABB72072).
CC   The sequence data for this patent did not form part of the printed
CC   specification, but was obtained in electronic format directly from WIPO
CC   at ftp.wipo.int/pub/published_pct_sequences.
XX
SQ   Sequence   403 AA;

  Query Match             41.5%;  Score 49;  DB 22;  Length 403;
  Best Local Similarity   58.3%;  Pred. No. 17;
  Matches    7;  Conservative    2;  Mismatches    3;  Indels    0;  Gaps    0;

Qy       7 YPHTHLVHQANP 18
           ||| || |: :|
Db     183 YPHGHLAHEMDP 194


RESULT 149
ABB58590
ID   ABB58590 standard; Protein; 598 AA.
XX
AC   ABB58590;
XX
DT   26-MAR-2002  (first entry)
XX
DE   Drosophila melanogaster polypeptide SEQ ID NO 2562.
XX
KW   Drosophila; developmental biology; cell signalling; insecticide;
KW   pharmaceutical.
XX
OS   Drosophila melanogaster.
XX
PN   WO200171042-A2.
XX
PD   27-SEP-2001.
XX
PF   23-MAR-2001; 2001WO-US09231.
XX
PR   23-MAR-2000; 2000US-191637P.
PR   11-JUL-2000; 2000US-0614150.
XX
PA   (PEKE ) PE CORP NY.
XX
PI   Venter JC,  Adams M,  Li PWD,  Myers EW;
XX
DR   WPI; 2001-656860/75.
DR   N-PSDB; ABL02693.
XX
PT   New isolated nucleic acid detection reagent for detecting 1000 or more
PT   genes from Drosophila and for elucidating cell signalling and cell-cell
PT   interactions -
XX
PS   Disclosure; SEQ ID NO 2562; 21pp + Sequence Listing; English.
XX
CC   The invention relates to an isolated nucleic acid detection reagent
CC   capable of detecting 1000 or more genes from Drosophila. The invention is
CC   useful in developmental biology and in elucidating cell signalling and
CC   cell-cell interactions in higher eukaryotes for the development of
CC   insecticides, therapeutics and pharmaceutical drugs. The invention
CC   discloses genomic DNA sequences (ABL16176-ABL30511), expressed DNA
CC   sequences (ABL01840-ABL16175) and the encoded proteins
CC   (ABB57737-ABB72072).
CC   The sequence data for this patent did not form part of the printed
CC   specification, but was obtained in electronic format directly from WIPO
CC   at ftp.wipo.int/pub/published_pct_sequences.
XX
SQ   Sequence   598 AA;

  Query Match             41.5%;  Score 49;  DB 22;  Length 598;
  Best Local Similarity   70.0%;  Pred. No. 27;
  Matches    7;  Conservative    3;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       3 FLQKYPHTHL 12
           :|::||||||
Db     543 YLEQYPHTHL 552


RESULT 150
AAR58704
ID   AAR58704 standard; Protein; 229 AA.
XX
AC   AAR58704;
XX
DT   27-MAR-1995  (first entry)
XX
DE   Apo-B RNA editing protein.
XX
KW   Apo-B RNA editing protein; apolipoprotein-B RNA editing protein;
KW   apolipoprotein-B48; apo-B48; apolipoprotein-B100; apo-B100;
KW   triglyceride; low density lipoprotein; LDL; cholesterol.
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OS   Rattus sp.
XX
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FT   Modified-site   72
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FT   Region          189..210
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PN   WO9418316-A.
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PD   18-AUG-1994.
XX
PF   08-FEB-1994;   94WO-US01422.
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PR   09-FEB-1993;   93US-0015203.
PR   24-NOV-1993;   93US-0158682.
XX
PA   (ARCH-) ARCH DEV CORP.
XX
PI   Burant CF,  Davidson N,  Teng B;
XX
DR   WPI; 1994-279737/34.
DR   N-PSDB; AAQ71632.
XX
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PT New apolipoprotein B RNA editing protein and DNA - used for
PT increasing the prodn. of apo B48 or for decreasing the prodn. of
PT apo B100
XX
PS Disclosure; Fig.1A-1B; 80pp; English.
XX
CC Xenopus oocytes injected with rat intestine poly-A+ RNA exhibited
CC a single fraction with in vitro editing activity using chicken S100
CC extract. This fraction was used to prepare a cDNA library in the
CC Superscript Plasmid System. Plasmid DNA was used for in vitro
CC transcription and capping. RNA transcribed from a single positive
CC clone produced over 50% editing of synthetic rat apo-B RNA in the
CC presence of S100 extract. This clone was sequenced and the
CC corresponding amino acid sequence deduced. The apo-B RNA editing
CC protein can be used to regulate apo-B48 and apo-100 production or
CC to study triglyceride metabolism, LDL clearance and plasma
CC cholesterol levels.
XX
SQ Sequence 229 AA;

Query Match 41.1%; Score 48.5; DB 15; Length 229;
Best Local Similarity 41.7%; Pred. No. 11;
Matches 10; Conservative 2; Mismatches 5; Indels 7; Gaps 1;

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Job time : 45 secs

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OM protein - protein search, using sw model

Run on: March 24, 2003, 17:46:35 ; Search time 14 Seconds
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Title: US-09-620-586B-12_COPY_49_69
Perfect score: 118
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Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 221153 seqs, 53462247 residues

Total number of hits satisfying chosen parameters: 221153

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
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Listing first 100 summaries

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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

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2	118	100.0	109	10	US-09-754-826-2	Sequence 2, Appli
3	118	100.0	126	9	US-09-859-211-6	Sequence 6, Appli
4	118	100.0	130	9	US-09-859-211-33	Sequence 33, Appl
5	118	100.0	226	9	US-09-859-211-35	Sequence 35, Appl
6	118	100.0	374	9	US-09-841-730-8	Sequence 8, Appli
7	118	100.0	375	9	US-09-841-730-2	Sequence 2, Appli
8	118	100.0	375	9	US-09-841-730-10	Sequence 10, Appl
9	118	100.0	375	9	US-09-841-730-12	Sequence 12, Appl
10	118	100.0	375	9	US-09-841-730-14	Sequence 14, Appl
11	118	100.0	375	9	US-09-841-730-18	Sequence 18, Appl
12	118	100.0	375	9	US-09-859-211-14	Sequence 14, Appl
13	118	100.0	375	9	US-09-859-211-19	Sequence 19, Appl
14	118	100.0	375	9	US-09-859-211-21	Sequence 21, Appl
15	118	100.0	375	9	US-09-859-211-23	Sequence 23, Appl
16	118	100.0	375	9	US-09-859-211-27	Sequence 27, Appl
17	118	100.0	375	9	US-09-859-211-29	Sequence 29, Appl
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19	118	100.0	375	10	US-09-859-894A-5	Sequence 5, Appli
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37	91	77.1	157	9	US-09-841-730-27	Sequence 27, Appl
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77	38	32.2	222	9	US-10-227-884-48	Sequence 48, Appl
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87	38	32.2	571	10	US-09-925-300-1673	Sequence 1673, Ap
88	38	32.2	581	12	US-10-139-876-18	Sequence 18, Appl
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90	38	32.2	586	9	US-09-955-999-64	Sequence 64, Appl
91	38	32.2	689	9	US-10-038-010-48	Sequence 48, Appl
92	38	32.2	705	9	US-09-955-999-98	Sequence 98, Appl

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ALIGNMENTS

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RESULT 1
US-09-859-211-8
; Sequence 8, Application US/09859211
; Patent No. US20020157125A1
; GENERAL INFORMATION:
;  APPLICANT: Lee, Se-Jin
;  APPLICANT:  McPherron, Alexandra C.
;  TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR-8
;  FILE REFERENCE: 07265/144001
;  CURRENT APPLICATION NUMBER: US/09/859,211
;  CURRENT FILING DATE:  2001-05-15
;  PRIOR APPLICATION NUMBER: 09/019,070
;  PRIOR FILING DATE: 1998-02-05
;  PRIOR APPLICATION NUMBER: 08/862,445
;  PRIOR FILING DATE: 1997-05-23
;  PRIOR APPLICATION NUMBER: 08/847,910
;  PRIOR FILING DATE: 1997-04-28
;  PRIOR APPLICATION NUMBER: 08/795,071
;  PRIOR FILING DATE: 1997-02-05
;  PRIOR APPLICATION NUMBER: 08/525,596
;  PRIOR FILING DATE: 1995-10-26
;  PRIOR APPLICATION NUMBER: PCT/US94/03019
;  PRIOR FILING DATE: 1994-03-18
;  PRIOR APPLICATION NUMBER: 08/033,923
;  PRIOR FILING DATE: 1993-03-19
;  NUMBER OF SEQ ID NOS: 51
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 8
;   LENGTH: 108
;   TYPE: PRT
;   ORGANISM: Homo sapiens
US-09-859-211-8

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RESULT 2
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; Sequence 2, Application US/09754826
; Patent No. US20020127234A1
; GENERAL INFORMATION:
;  APPLICANT: El Halawani, Mohamed E.
;  APPLICANT:  You, Seungkwon
;  TITLE OF INVENTION: USE OF PASSIVE MYOSTATIN IMMUNIZATION
;  FILE REFERENCE: 600.492US1
;  CURRENT APPLICATION NUMBER: US/09/754,826
;  CURRENT FILING DATE:  2001-01-04
;  NUMBER OF SEQ ID NOS: 6
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US-09-754-826-2

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RESULT 3
US-09-859-211-6
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; Patent No. US20020157125A1
; GENERAL INFORMATION:
;  APPLICANT: Lee, Se-Jin
;  APPLICANT:  McPherron, Alexandra C.
;  TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR-8
;  FILE REFERENCE: 07265/144001
;  CURRENT APPLICATION NUMBER: US/09/859,211
;  CURRENT FILING DATE:  2001-05-15
;  PRIOR APPLICATION NUMBER: 09/019,070
;  PRIOR FILING DATE: 1998-02-05
;  PRIOR APPLICATION NUMBER: 08/862,445
;  PRIOR FILING DATE: 1997-05-23
;  PRIOR APPLICATION NUMBER: 08/847,910
;  PRIOR FILING DATE: 1997-04-28
;  PRIOR APPLICATION NUMBER: 08/795,071
;  PRIOR FILING DATE: 1997-02-05
;  PRIOR APPLICATION NUMBER: 08/525,596
;  PRIOR FILING DATE: 1995-10-26
;  PRIOR APPLICATION NUMBER: PCT/US94/03019
;  PRIOR FILING DATE: 1994-03-18
;  PRIOR APPLICATION NUMBER: 08/033,923
;  PRIOR FILING DATE: 1993-03-19
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US-09-859-211-6

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RESULT 4
US-09-859-211-33
; Sequence 33, Application US/09859211
; Patent No. US20020157125A1
; GENERAL INFORMATION:
;  APPLICANT: Lee, Se-Jin
;  APPLICANT:  McPherron, Alexandra C.
;  TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR-8
;  FILE REFERENCE: 07265/144001
;  CURRENT APPLICATION NUMBER: US/09/859,211
;  CURRENT FILING DATE:  2001-05-15
;  PRIOR APPLICATION NUMBER: 09/019,070
;  PRIOR FILING DATE: 1998-02-05
;  PRIOR APPLICATION NUMBER: 08/862,445
;  PRIOR FILING DATE: 1997-05-23
;  PRIOR APPLICATION NUMBER: 08/847,910
;  PRIOR FILING DATE: 1997-04-28
;  PRIOR APPLICATION NUMBER: 08/795,071
;  PRIOR FILING DATE: 1997-02-05
;  PRIOR APPLICATION NUMBER: 08/525,596
;  PRIOR FILING DATE: 1995-10-26
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;  PRIOR APPLICATION NUMBER: PCT/US94/03019
;  PRIOR FILING DATE: 1994-03-18
;  PRIOR APPLICATION NUMBER: 08/033,923
;  PRIOR FILING DATE: 1993-03-19
;  NUMBER OF SEQ ID NOS: 51
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 33
;   LENGTH: 130
;   TYPE: PRT
;   ORGANISM: Rattus norvegicus
US-09-859-211-33

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RESULT 5
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; Sequence 35, Application US/09859211
; Patent No. US20020157125A1
; GENERAL INFORMATION:
;  APPLICANT: Lee, Se-Jin
;  APPLICANT:  McPherron, Alexandra C.
;  TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR-8
;  FILE REFERENCE: 07265/144001
;  CURRENT APPLICATION NUMBER: US/09/859,211
;  CURRENT FILING DATE:  2001-05-15
;  PRIOR APPLICATION NUMBER: 09/019,070
;  PRIOR FILING DATE: 1998-02-05
;  PRIOR APPLICATION NUMBER: 08/862,445
;  PRIOR FILING DATE: 1997-05-23
;  PRIOR APPLICATION NUMBER: 08/847,910
;  PRIOR FILING DATE: 1997-04-28
;  PRIOR APPLICATION NUMBER: 08/795,071
;  PRIOR FILING DATE: 1997-02-05
;  PRIOR APPLICATION NUMBER: 08/525,596
;  PRIOR FILING DATE: 1995-10-26
;  PRIOR APPLICATION NUMBER: PCT/US94/03019
;  PRIOR FILING DATE: 1994-03-18
;  PRIOR APPLICATION NUMBER: 08/033,923
;  PRIOR FILING DATE: 1993-03-19
;  NUMBER OF SEQ ID NOS: 51
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 35
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;   TYPE: PRT
;   ORGANISM: Gallus gallus
US-09-859-211-35

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RESULT 6
US-09-841-730-8
; Sequence 8, Application US/09841730
; Patent No. US20020157126A1
; GENERAL INFORMATION:
;  APPLICANT: Lee, Se-Jin
;  APPLICANT:  McPherron, Alexandra C.
;  TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR RECEPTORS,
;  TITLE OF INVENTION:  AGONISTS AND ANTAGONISTS THEREOF, AND METHODS OF USING SAME
;  FILE REFERENCE: JHU1470-2
;  CURRENT APPLICATION NUMBER: US/09/841,730
;  CURRENT FILING DATE:  2001-04-24
;  PRIOR APPLICATION NUMBER: 09/626,896
;  PRIOR FILING DATE: 2000-07-27
;  PRIOR APPLICATION NUMBER: 09/485,046
;  PRIOR FILING DATE: 2000-01-31
;  PRIOR APPLICATION NUMBER: PCT/US98/15598
;  PRIOR FILING DATE: 1998-07-28
;  PRIOR APPLICATION NUMBER: 60/054,461
;  PRIOR FILING DATE: 1997-08-01
;  NUMBER OF SEQ ID NOS: 29
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 8
;   LENGTH: 374
;   TYPE: PRT
;   ORGANISM: Gallus gallus
US-09-841-730-8

  Query Match             100.0%;  Score 118;  DB 9;  Length 374;
  Best Local Similarity   100.0%;  Pred. No. 8.8e-10;
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RESULT 7
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; Sequence 2, Application US/09841730
; Patent No. US20020157126A1
; GENERAL INFORMATION:
;  APPLICANT: Lee, Se-Jin
;  APPLICANT:  McPherron, Alexandra C.
;  TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR RECEPTORS,
;  TITLE OF INVENTION:  AGONISTS AND ANTAGONISTS THEREOF, AND METHODS OF USING SAME
;  FILE REFERENCE: JHU1470-2
;  CURRENT APPLICATION NUMBER: US/09/841,730
;  CURRENT FILING DATE:  2001-04-24
;  PRIOR APPLICATION NUMBER: 09/626,896
;  PRIOR FILING DATE: 2000-07-27
;  PRIOR APPLICATION NUMBER: 09/485,046
;  PRIOR FILING DATE: 2000-01-31
;  PRIOR APPLICATION NUMBER: PCT/US98/15598
;  PRIOR FILING DATE: 1998-07-28
;  PRIOR APPLICATION NUMBER: 60/054,461
;  PRIOR FILING DATE: 1997-08-01
;  NUMBER OF SEQ ID NOS: 29
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; SEQ ID NO 2
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;   TYPE: PRT
;   ORGANISM: Homo sapiens
US-09-841-730-2

  Query Match             100.0%;  Score 118;  DB 9;  Length 375;
  Best Local Similarity   100.0%;  Pred. No. 8.8e-10;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db     315 FVFLQKYPHTHLVHQANPRGS 335


RESULT 8
US-09-841-730-10
; Sequence 10, Application US/09841730
; Patent No. US20020157126A1
; GENERAL INFORMATION:
;  APPLICANT: Lee, Se-Jin
;  APPLICANT:  McPherron, Alexandra C.
;  TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR RECEPTORS,
;  TITLE OF INVENTION:  AGONISTS AND ANTAGONISTS THEREOF, AND METHODS OF USING SAME
```

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;  FILE REFERENCE: JHU1470-2
;  CURRENT APPLICATION NUMBER: US/09/841,730
;  CURRENT FILING DATE:  2001-04-24
;  PRIOR APPLICATION NUMBER: 09/626,896
;  PRIOR FILING DATE: 2000-07-27
;  PRIOR APPLICATION NUMBER: 09/485,046
;  PRIOR FILING DATE: 2000-01-31
;  PRIOR APPLICATION NUMBER: PCT/US98/15598
;  PRIOR FILING DATE: 1998-07-28
;  PRIOR APPLICATION NUMBER: 60/054,461
;  PRIOR FILING DATE: 1997-08-01
;  NUMBER OF SEQ ID NOS: 29
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 10
;   LENGTH: 375
;   TYPE: PRT
;   ORGANISM: Baboon
US-09-841-730-10

  Query Match             100.0%;  Score 118;  DB 9;  Length 375;
  Best Local Similarity   100.0%;  Pred. No. 8.8e-10;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db     315 FVFLQKYPHTHLVHQANPRGS 335


RESULT 9
US-09-841-730-12
; Sequence 12, Application US/09841730
; Patent No. US20020157126A1
; GENERAL INFORMATION:
;  APPLICANT: Lee, Se-Jin
;  APPLICANT:  McPherron, Alexandra C.
;  TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR RECEPTORS,
;  TITLE OF INVENTION:  AGONISTS AND ANTAGONISTS THEREOF, AND METHODS OF USING SAME
;  FILE REFERENCE: JHU1470-2
;  CURRENT APPLICATION NUMBER: US/09/841,730
;  CURRENT FILING DATE:  2001-04-24
;  PRIOR APPLICATION NUMBER: 09/626,896
;  PRIOR FILING DATE: 2000-07-27
;  PRIOR APPLICATION NUMBER: 09/485,046
;  PRIOR FILING DATE: 2000-01-31
;  PRIOR APPLICATION NUMBER: PCT/US98/15598
;  PRIOR FILING DATE: 1998-07-28
;  PRIOR APPLICATION NUMBER: 60/054,461
;  PRIOR FILING DATE: 1997-08-01
;  NUMBER OF SEQ ID NOS: 29
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 12
;   LENGTH: 375
;   TYPE: PRT
;   ORGANISM: Bovine
US-09-841-730-12

  Query Match             100.0%;  Score 118;  DB 9;  Length 375;
  Best Local Similarity   100.0%;  Pred. No. 8.8e-10;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db     315 FVFLQKYPHTHLVHQANPRGS 335


RESULT 10
US-09-841-730-14
; Sequence 14, Application US/09841730
; Patent No. US20020157126A1
; GENERAL INFORMATION:
;  APPLICANT: Lee, Se-Jin
;  APPLICANT:  McPherron, Alexandra C.
;  TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR RECEPTORS,
;  TITLE OF INVENTION:  AGONISTS AND ANTAGONISTS THEREOF, AND METHODS OF USING SAME
;  FILE REFERENCE: JHU1470-2
;  CURRENT APPLICATION NUMBER: US/09/841,730
;  CURRENT FILING DATE:  2001-04-24
;  PRIOR APPLICATION NUMBER: 09/626,896
;  PRIOR FILING DATE: 2000-07-27
;  PRIOR APPLICATION NUMBER: 09/485,046
;  PRIOR FILING DATE: 2000-01-31
;  PRIOR APPLICATION NUMBER: PCT/US98/15598
;  PRIOR FILING DATE: 1998-07-28
;  PRIOR APPLICATION NUMBER: 60/054,461
;  PRIOR FILING DATE: 1997-08-01
;  NUMBER OF SEQ ID NOS: 29
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 14
;   LENGTH: 375
;   TYPE: PRT
;   ORGANISM: Porcine
US-09-841-730-14

  Query Match             100.0%;  Score 118;  DB 9;  Length 375;
  Best Local Similarity   100.0%;  Pred. No. 8.8e-10;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db     315 FVFLQKYPHTHLVHQANPRGS 335


RESULT 11
US-09-841-730-18
; Sequence 18, Application US/09841730
; Patent No. US20020157126A1
; GENERAL INFORMATION:
;  APPLICANT: Lee, Se-Jin
;  APPLICANT:  McPherron, Alexandra C.
;  TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR RECEPTORS,
;  TITLE OF INVENTION:  AGONISTS AND ANTAGONISTS THEREOF, AND METHODS OF USING SAME
;  FILE REFERENCE: JHU1470-2
;  CURRENT APPLICATION NUMBER: US/09/841,730
;  CURRENT FILING DATE:  2001-04-24
;  PRIOR APPLICATION NUMBER: 09/626,896
;  PRIOR FILING DATE: 2000-07-27
;  PRIOR APPLICATION NUMBER: 09/485,046
;  PRIOR FILING DATE: 2000-01-31
;  PRIOR APPLICATION NUMBER: PCT/US98/15598
;  PRIOR FILING DATE: 1998-07-28
;  PRIOR APPLICATION NUMBER: 60/054,461
;  PRIOR FILING DATE: 1997-08-01
;  NUMBER OF SEQ ID NOS: 29
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 18
;   LENGTH: 375
;   TYPE: PRT
;   ORGANISM: Meleagris gallopavo
US-09-841-730-18

  Query Match             100.0%;  Score 118;  DB 9;  Length 375;
  Best Local Similarity   100.0%;  Pred. No. 8.8e-10;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db     315 FVFLQKYPHTHLVHQANPRGS 335


RESULT 12
US-09-859-211-14
; Sequence 14, Application US/09859211
; Patent No. US20020157125A1
; GENERAL INFORMATION:
;  APPLICANT: Lee, Se-Jin
;  APPLICANT:  McPherron, Alexandra C.
```

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;  TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR-8
;  FILE REFERENCE: 07265/144001
;  CURRENT APPLICATION NUMBER: US/09/859,211
;  CURRENT FILING DATE:  2001-05-15
;  PRIOR APPLICATION NUMBER: 09/019,070
;  PRIOR FILING DATE: 1998-02-05
;  PRIOR APPLICATION NUMBER: 08/862,445
;  PRIOR FILING DATE: 1997-05-23
;  PRIOR APPLICATION NUMBER: 08/847,910
;  PRIOR FILING DATE: 1997-04-28
;  PRIOR APPLICATION NUMBER: 08/795,071
;  PRIOR FILING DATE: 1997-02-05
;  PRIOR APPLICATION NUMBER: 08/525,596
;  PRIOR FILING DATE: 1995-10-26
;  PRIOR APPLICATION NUMBER: PCT/US94/03019
;  PRIOR FILING DATE: 1994-03-18
;  PRIOR APPLICATION NUMBER: 08/033,923
;  PRIOR FILING DATE: 1993-03-19
;  NUMBER OF SEQ ID NOS: 51
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 14
;   LENGTH: 375
;   TYPE: PRT
;   ORGANISM: Homo sapiens
US-09-859-211-14

  Query Match             100.0%;  Score 118;  DB 9;  Length 375;
  Best Local Similarity   100.0%;  Pred. No. 8.8e-10;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      1 FVFLQKYPHTHLVHQANPRGS 21
          |||||||||||||||||||||
Db    315 FVFLQKYPHTHLVHQANPRGS 335


RESULT 13
US-09-859-211-19
; Sequence 19, Application US/09859211
; Patent No. US20020157125A1
; GENERAL INFORMATION:
;  APPLICANT: Lee, Se-Jin
;  APPLICANT:  McPherron, Alexandra C.
;  TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR-8
;  FILE REFERENCE: 07265/144001
;  CURRENT APPLICATION NUMBER: US/09/859,211
;  CURRENT FILING DATE:  2001-05-15
;  PRIOR APPLICATION NUMBER: 09/019,070
;  PRIOR FILING DATE: 1998-02-05
;  PRIOR APPLICATION NUMBER: 08/862,445
;  PRIOR FILING DATE: 1997-05-23
;  PRIOR APPLICATION NUMBER: 08/847,910
;  PRIOR FILING DATE: 1997-04-28
;  PRIOR APPLICATION NUMBER: 08/795,071
;  PRIOR FILING DATE: 1997-02-05
;  PRIOR APPLICATION NUMBER: 08/525,596
;  PRIOR FILING DATE: 1995-10-26
;  PRIOR APPLICATION NUMBER: PCT/US94/03019
;  PRIOR FILING DATE: 1994-03-18
;  PRIOR APPLICATION NUMBER: 08/033,923
;  PRIOR FILING DATE: 1993-03-19
;  NUMBER OF SEQ ID NOS: 51
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 19
;   LENGTH: 375
;   TYPE: PRT
;   ORGANISM: Baboon
US-09-859-211-19

  Query Match             100.0%;  Score 118;  DB 9;  Length 375;
  Best Local Similarity   100.0%;  Pred. No. 8.8e-10;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      1 FVFLQKYPHTHLVHQANPRGS 21
          |||||||||||||||||||||
Db    315 FVFLQKYPHTHLVHQANPRGS 335


RESULT 14
US-09-859-211-21
; Sequence 21, Application US/09859211
; Patent No. US20020157125A1
; GENERAL INFORMATION:
;  APPLICANT: Lee, Se-Jin
;  APPLICANT:  McPherron, Alexandra C.
;  TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR-8
;  FILE REFERENCE: 07265/144001
;  CURRENT APPLICATION NUMBER: US/09/859,211
;  CURRENT FILING DATE:  2001-05-15
;  PRIOR APPLICATION NUMBER: 09/019,070
;  PRIOR FILING DATE: 1998-02-05
;  PRIOR APPLICATION NUMBER: 08/862,445
;  PRIOR FILING DATE: 1997-05-23
;  PRIOR APPLICATION NUMBER: 08/847,910
;  PRIOR FILING DATE: 1997-04-28
;  PRIOR APPLICATION NUMBER: 08/795,071
;  PRIOR FILING DATE: 1997-02-05
;  PRIOR APPLICATION NUMBER: 08/525,596
;  PRIOR FILING DATE: 1995-10-26
;  PRIOR APPLICATION NUMBER: PCT/US94/03019
;  PRIOR FILING DATE: 1994-03-18
;  PRIOR APPLICATION NUMBER: 08/033,923
;  PRIOR FILING DATE: 1993-03-19
;  NUMBER OF SEQ ID NOS: 51
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 21
;   LENGTH: 375
;   TYPE: PRT
;   ORGANISM: Bovine
US-09-859-211-21

  Query Match             100.0%;  Score 118;  DB 9;  Length 375;
  Best Local Similarity   100.0%;  Pred. No. 8.8e-10;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      1 FVFLQKYPHTHLVHQANPRGS 21
          |||||||||||||||||||||
Db    315 FVFLQKYPHTHLVHQANPRGS 335


RESULT 15
US-09-859-211-23
; Sequence 23, Application US/09859211
; Patent No. US20020157125A1
; GENERAL INFORMATION:
;  APPLICANT: Lee, Se-Jin
;  APPLICANT:  McPherron, Alexandra C.
;  TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR-8
;  FILE REFERENCE: 07265/144001
;  CURRENT APPLICATION NUMBER: US/09/859,211
;  CURRENT FILING DATE:  2001-05-15
;  PRIOR APPLICATION NUMBER: 09/019,070
;  PRIOR FILING DATE: 1998-02-05
;  PRIOR APPLICATION NUMBER: 08/862,445
;  PRIOR FILING DATE: 1997-05-23
;  PRIOR APPLICATION NUMBER: 08/847,910
;  PRIOR FILING DATE: 1997-04-28
;  PRIOR APPLICATION NUMBER: 08/795,071
;  PRIOR FILING DATE: 1997-02-05
;  PRIOR APPLICATION NUMBER: 08/525,596
;  PRIOR FILING DATE: 1995-10-26
;  PRIOR APPLICATION NUMBER: PCT/US94/03019
;  PRIOR FILING DATE: 1994-03-18
;  PRIOR APPLICATION NUMBER: 08/033,923
;  PRIOR FILING DATE: 1993-03-19
;  NUMBER OF SEQ ID NOS: 51
;  SOFTWARE: FastSEQ for Windows Version 4.0
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; SEQ ID NO 23
; LENGTH: 375
; TYPE: PRT
; ORGANISM: Gallus gallus
US-09-859-211-23

Query Match 100.0%; Score 118; DB 9; Length 375;
Best Local Similarity 100.0%; Pred. No. 8.8e-10;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FVFLQKYPHTHLVHQANPRGS 21
||||||||||||||||||||||
Db 315 FVFLQKYPHTHLVHQANPRGS 335

RESULT 16
US-09-859-211-27
; Sequence 27, Application US/09859211
; Patent No. US20020157125A1
; GENERAL INFORMATION:
; APPLICANT: Lee, Se-Jin
; APPLICANT: McPherron, Alexandra C.
; TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR-8
; FILE REFERENCE: 07265/144001
; CURRENT APPLICATION NUMBER: US/09/859,211
; CURRENT FILING DATE: 2001-05-15
; PRIOR APPLICATION NUMBER: 09/019,070
; PRIOR FILING DATE: 1998-02-05
; PRIOR APPLICATION NUMBER: 08/862,445
; PRIOR FILING DATE: 1997-05-23
; PRIOR APPLICATION NUMBER: 08/847,910
; PRIOR FILING DATE: 1997-04-28
; PRIOR APPLICATION NUMBER: 08/795,071
; PRIOR FILING DATE: 1997-02-05
; PRIOR APPLICATION NUMBER: 08/525,596
; PRIOR FILING DATE: 1995-10-26
; PRIOR APPLICATION NUMBER: PCT/US94/03019
; PRIOR FILING DATE: 1994-03-18
; PRIOR APPLICATION NUMBER: 08/033,923
; PRIOR FILING DATE: 1993-03-19
; NUMBER OF SEQ ID NOS: 51
; SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 27
; LENGTH: 375
; TYPE: PRT
; ORGANISM: Meleagris gallopavo
US-09-859-211-27

Query Match 100.0%; Score 118; DB 9; Length 375;
Best Local Similarity 100.0%; Pred. No. 8.8e-10;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FVFLQKYPHTHLVHQANPRGS 21
||||||||||||||||||||||
Db 315 FVFLQKYPHTHLVHQANPRGS 335

RESULT 17
US-09-859-211-29
; Sequence 29, Application US/09859211
; Patent No. US20020157125A1
; GENERAL INFORMATION:
; APPLICANT: Lee, Se-Jin
; APPLICANT: McPherron, Alexandra C.
; TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR-8
; FILE REFERENCE: 07265/144001
; CURRENT APPLICATION NUMBER: US/09/859,211
; CURRENT FILING DATE: 2001-05-15
; PRIOR APPLICATION NUMBER: 09/019,070
; PRIOR FILING DATE: 1998-02-05
; PRIOR APPLICATION NUMBER: 08/862,445
; PRIOR FILING DATE: 1997-05-23
; PRIOR APPLICATION NUMBER: 08/847,910
; PRIOR FILING DATE: 1997-04-28
; PRIOR APPLICATION NUMBER: 08/795,071
; PRIOR FILING DATE: 1997-02-05
; PRIOR APPLICATION NUMBER: 08/525,596
; PRIOR FILING DATE: 1995-10-26
; PRIOR APPLICATION NUMBER: PCT/US94/03019
; PRIOR FILING DATE: 1994-03-18
; PRIOR APPLICATION NUMBER: 08/033,923
; PRIOR FILING DATE: 1993-03-19
; NUMBER OF SEQ ID NOS: 51
; SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 29
; LENGTH: 375
; TYPE: PRT
; ORGANISM: Porcine
US-09-859-211-29

Query Match 100.0%; Score 118; DB 9; Length 375;
Best Local Similarity 100.0%; Pred. No. 8.8e-10;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FVFLQKYPHTHLVHQANPRGS 21
||||||||||||||||||||||
Db 315 FVFLQKYPHTHLVHQANPRGS 335

RESULT 18
US-09-454-540-5
; Sequence 5, Application US/09454540
; Patent No. US20010053358A1
; GENERAL INFORMATION:
; APPLICANT: Se-Jin Lee and Alexandra McPherron
; TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR-11
; NUMBER OF SEQUENCES: 9
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Fish & Richardson P.C.
; STREET: 4225 Executive Square, Suite 1400
; CITY: La Jolla
; STATE: California
; COUNTRY: US
; ZIP: 92037
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/09/454,540
; FILING DATE: 06-DEC-1999
; CLASSIFICATION:
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: 08/795,671
; FILING DATE: February 6, 1997
; CLASSIFICATION:
; ATTORNEY/AGENT INFORMATION:
; NAME: HAILE, PH.D., LISA A.
; REGISTRATION NUMBER: 38,347
; REFERENCE/DOCKET NUMBER: 07265/106001
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 619/678-5070
; TELEFAX: 619/678-5099
; INFORMATION FOR SEQ ID NO: 5:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 375 amino acids
; TYPE: amino acid
; STRANDEDNESS: single
; TOPOLOGY: linear
; MOLECULE TYPE: protein
; IMMEDIATE SOURCE:
; CLONE: GDF-8
; FEATURE:
; NAME/KEY: Protein
; LOCATION: 1..375

US-09-454-540-5

Query Match 100.0%; Score 118; DB 10; Length 375;
Best Local Similarity 100.0%; Pred. No. 8.8e-10;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db     315 FVFLQKYPHTHLVHQANPRGS 335
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RESULT 19
US-09-859-894A-5
; Sequence 5, Application US/09859894A
; Patent No. US20020150577A1
; GENERAL INFORMATION:
; APPLICANT: THE JOHNS HOPKINS UNIVERSITY SCHOOL OF MEDICINE
; APPLICANT: Lee, Se-Jin
; APPLICANT: McPherron, Alexandra C.
; TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR-11
; FILE REFERENCE: JHU1200-9
; CURRENT APPLICATION NUMBER: US/09/859,894A
; CURRENT FILING DATE: 2001-05-16
; PRIOR APPLICATION NUMBER: 09/019,901
; PRIOR FILING DATE: 1998-02-06
; PRIOR APPLICATION NUMBER: 08/795,671
; PRIOR FILING DATE: 1997-02-06
; PRIOR APPLICATION NUMBER: 08/706,958
; PRIOR FILING DATE: 1996-09-03
; PRIOR APPLICATION NUMBER: 08/272,763
; PRIOR FILING DATE: 1994-07-08
; NUMBER OF SEQ ID NOS: 11
; SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 5
; LENGTH: 375
; TYPE: PRT
; ORGANISM: Homo sapiens
US-09-859-894A-5

Query Match 100.0%; Score 118; DB 10; Length 375;
Best Local Similarity 100.0%; Pred. No. 8.8e-10;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db     315 FVFLQKYPHTHLVHQANPRGS 335
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RESULT 20
US-09-841-730-4
; Sequence 4, Application US/09841730
; Patent No. US20020157126A1
; GENERAL INFORMATION:
; APPLICANT: Lee, Se-Jin
; APPLICANT: McPherron, Alexandra C.
; TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR RECEPTORS,
; TITLE OF INVENTION: AGONISTS AND ANTAGONISTS THEREOF, AND METHODS OF USING SAME
; FILE REFERENCE: JHU1470-2
; CURRENT APPLICATION NUMBER: US/09/841,730
; CURRENT FILING DATE: 2001-04-24
; PRIOR APPLICATION NUMBER: 09/626,896
; PRIOR FILING DATE: 2000-07-27
; PRIOR APPLICATION NUMBER: 09/485,046
; PRIOR FILING DATE: 2000-01-31
; PRIOR APPLICATION NUMBER: PCT/US98/15598
; PRIOR FILING DATE: 1998-07-28
; PRIOR APPLICATION NUMBER: 60/054,461
; PRIOR FILING DATE: 1997-08-01
; NUMBER OF SEQ ID NOS: 29
; SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 4
; LENGTH: 376
; TYPE: PRT
; ORGANISM: Mus musculus
US-09-841-730-4

Query Match 100.0%; Score 118; DB 9; Length 376;
Best Local Similarity 100.0%; Pred. No. 8.9e-10;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db     316 FVFLQKYPHTHLVHQANPRGS 336
```

RESULT 21
US-09-841-730-6
; Sequence 6, Application US/09841730
; Patent No. US20020157126A1
; GENERAL INFORMATION:
; APPLICANT: Lee, Se-Jin
; APPLICANT: McPherron, Alexandra C.
; TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR RECEPTORS,
; TITLE OF INVENTION: AGONISTS AND ANTAGONISTS THEREOF, AND METHODS OF USING SAME
; FILE REFERENCE: JHU1470-2
; CURRENT APPLICATION NUMBER: US/09/841,730
; CURRENT FILING DATE: 2001-04-24
; PRIOR APPLICATION NUMBER: 09/626,896
; PRIOR FILING DATE: 2000-07-27
; PRIOR APPLICATION NUMBER: 09/485,046
; PRIOR FILING DATE: 2000-01-31
; PRIOR APPLICATION NUMBER: PCT/US98/15598
; PRIOR FILING DATE: 1998-07-28
; PRIOR APPLICATION NUMBER: 60/054,461
; PRIOR FILING DATE: 1997-08-01
; NUMBER OF SEQ ID NOS: 29
; SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 6
; LENGTH: 376
; TYPE: PRT
; ORGANISM: Rattus norvegicus
US-09-841-730-6

Query Match 100.0%; Score 118; DB 9; Length 376;
Best Local Similarity 100.0%; Pred. No. 8.9e-10;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db     316 FVFLQKYPHTHLVHQANPRGS 336
```

RESULT 22
US-09-859-211-12
; Sequence 12, Application US/09859211
; Patent No. US20020157125A1
; GENERAL INFORMATION:
; APPLICANT: Lee, Se-Jin
; APPLICANT: McPherron, Alexandra C.
; TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR-8
; FILE REFERENCE: 07265/144001
; CURRENT APPLICATION NUMBER: US/09/859,211
; CURRENT FILING DATE: 2001-05-15
; PRIOR APPLICATION NUMBER: 09/019,070
; PRIOR FILING DATE: 1998-02-05
; PRIOR APPLICATION NUMBER: 08/862,445
; PRIOR FILING DATE: 1997-05-23
; PRIOR APPLICATION NUMBER: 08/847,910
; PRIOR FILING DATE: 1997-04-28
; PRIOR APPLICATION NUMBER: 08/795,071
; PRIOR FILING DATE: 1997-02-05
; PRIOR APPLICATION NUMBER: 08/525,596
; PRIOR FILING DATE: 1995-10-26
; PRIOR APPLICATION NUMBER: PCT/US94/03019
; PRIOR FILING DATE: 1994-03-18
; PRIOR APPLICATION NUMBER: 08/033,923

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;  PRIOR FILING DATE: 1993-03-19
;  NUMBER OF SEQ ID NOS: 51
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 12
;   LENGTH: 376
;   TYPE: PRT
;   ORGANISM: Mus musculus
US-09-859-211-12

  Query Match             100.0%;  Score 118;  DB 9;  Length 376;
  Best Local Similarity   100.0%;  Pred. No. 8.9e-10;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db     316 FVFLQKYPHTHLVHQANPRGS 336


RESULT 23
US-09-859-211-25
; Sequence 25, Application US/09859211
; Patent No. US20020157125A1
; GENERAL INFORMATION:
;  APPLICANT: Lee, Se-Jin
;  APPLICANT:  McPherron, Alexandra C.
;  TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR-8
;  FILE REFERENCE: 07265/144001
;  CURRENT APPLICATION NUMBER: US/09/859,211
;  CURRENT FILING DATE:  2001-05-15
;  PRIOR APPLICATION NUMBER: 09/019,070
;  PRIOR FILING DATE: 1998-02-05
;  PRIOR APPLICATION NUMBER: 08/862,445
;  PRIOR FILING DATE: 1997-05-23
;  PRIOR APPLICATION NUMBER: 08/847,910
;  PRIOR FILING DATE: 1997-04-28
;  PRIOR APPLICATION NUMBER: 08/795,071
;  PRIOR FILING DATE: 1997-02-05
;  PRIOR APPLICATION NUMBER: 08/525,596
;  PRIOR FILING DATE: 1995-10-26
;  PRIOR APPLICATION NUMBER: PCT/US94/03019
;  PRIOR FILING DATE: 1994-03-18
;  PRIOR APPLICATION NUMBER: 08/033,923
;  PRIOR FILING DATE: 1993-03-19
;  NUMBER OF SEQ ID NOS: 51
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 25
;   LENGTH: 376
;   TYPE: PRT
;   ORGANISM: Rattus norvegicus
US-09-859-211-25

  Query Match             100.0%;  Score 118;  DB 9;  Length 376;
  Best Local Similarity   100.0%;  Pred. No. 8.9e-10;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db     316 FVFLQKYPHTHLVHQANPRGS 336


RESULT 24
US-09-813-398-38
; Sequence 38, Application US/09813398
; Patent No. US20020169292A1
; GENERAL INFORMATION:
;  APPLICANT: Bruce D. Weintraub
;  APPLICANT:  Mariusz W. Szkudlinski
;  APPLICANT:  University of Maryland
;  TITLE OF INVENTION: CYSTINE KNOT GROWTH FACTOR MUTANTS
;  FILE REFERENCE: UOFMD.003C1
;  CURRENT APPLICATION NUMBER: US/09/813,398
;  CURRENT FILING DATE:  2001-03-20
;  PRIOR APPLICATION NUMBER: PCT/US99/05908
;  PRIOR FILING DATE: 1999-03-19
;  PRIOR APPLICATION NUMBER: PCT/US98/19772
;  PRIOR FILING DATE: 1998-09-22
;  NUMBER OF SEQ ID NOS: 41
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 38
;   LENGTH: 376
;   TYPE: PRT
;   ORGANISM: HOMO SAPIEN
US-09-813-398-38

  Query Match             100.0%;  Score 118;  DB 9;  Length 376;
  Best Local Similarity   100.0%;  Pred. No. 8.9e-10;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db     316 FVFLQKYPHTHLVHQANPRGS 336


RESULT 25
US-09-859-894A-11
; Sequence 11, Application US/09859894A
; Patent No. US20020150577A1
; GENERAL INFORMATION:
;  APPLICANT: THE JOHNS HOPKINS UNIVERSITY SCHOOL OF MEDICINE
;  APPLICANT:  Lee, Se-Jin
;  APPLICANT:  McPherron, Alexandra C.
;  TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR-11
;  FILE REFERENCE: JHU1200-9
;  CURRENT APPLICATION NUMBER: US/09/859,894A
;  CURRENT FILING DATE:  2001-05-16
;  PRIOR APPLICATION NUMBER: 09/019,901
;  PRIOR FILING DATE: 1998-02-06
;  PRIOR APPLICATION NUMBER: 08/795,671
;  PRIOR FILING DATE: 1997-02-06
;  PRIOR APPLICATION NUMBER: 08/706,958
;  PRIOR FILING DATE: 1996-09-03
;  PRIOR APPLICATION NUMBER: 08/272,763
;  PRIOR FILING DATE: 1994-07-08
;  NUMBER OF SEQ ID NOS: 11
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 11
;   LENGTH: 376
;   TYPE: PRT
;   ORGANISM: Mus musculus
US-09-859-894A-11

  Query Match             100.0%;  Score 118;  DB 10;  Length 376;
  Best Local Similarity   100.0%;  Pred. No. 8.9e-10;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db     316 FVFLQKYPHTHLVHQANPRGS 336


RESULT 26
US-09-841-730-16
; Sequence 16, Application US/09841730
; Patent No. US20020157126A1
; GENERAL INFORMATION:
;  APPLICANT: Lee, Se-Jin
;  APPLICANT:  McPherron, Alexandra C.
;  TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR RECEPTORS,
;  TITLE OF INVENTION:  AGONISTS AND ANTAGONISTS THEREOF, AND METHODS OF USING SAME
;  FILE REFERENCE: JHU1470-2
;  CURRENT APPLICATION NUMBER: US/09/841,730
;  CURRENT FILING DATE:  2001-04-24
;  PRIOR APPLICATION NUMBER: 09/626,896
;  PRIOR FILING DATE: 2000-07-27
;  PRIOR APPLICATION NUMBER: 09/485,046
;  PRIOR FILING DATE: 2000-01-31
```

```
;  PRIOR APPLICATION NUMBER: PCT/US98/15598
;  PRIOR FILING DATE: 1998-07-28
;  PRIOR APPLICATION NUMBER: 60/054,461
;  PRIOR FILING DATE: 1997-08-01
;  NUMBER OF SEQ ID NOS: 29
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 16
;   LENGTH: 375
;   TYPE: PRT
;   ORGANISM: Ovine
US-09-841-730-16

  Query Match             94.9%;  Score 112;  DB 9;  Length 375;
  Best Local Similarity   90.5%;  Pred. No. 6.6e-09;
  Matches   19;  Conservative    2;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |:||||||||||||||||:||
Db     315 FLFLQKYPHTHLVHQANPKGS 335


RESULT 27
US-09-859-211-31
; Sequence 31, Application US/09859211
; Patent No. US20020157125A1
; GENERAL INFORMATION:
;  APPLICANT: Lee, Se-Jin
;  APPLICANT:  McPherron, Alexandra C.
;  TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR-8
;  FILE REFERENCE: 07265/144001
;  CURRENT APPLICATION NUMBER: US/09/859,211
;  CURRENT FILING DATE:  2001-05-15
;  PRIOR APPLICATION NUMBER: 09/019,070
;  PRIOR FILING DATE: 1998-02-05
;  PRIOR APPLICATION NUMBER: 08/862,445
;  PRIOR FILING DATE: 1997-05-23
;  PRIOR APPLICATION NUMBER: 08/847,910
;  PRIOR FILING DATE: 1997-04-28
;  PRIOR APPLICATION NUMBER: 08/795,071
;  PRIOR FILING DATE: 1997-02-05
;  PRIOR APPLICATION NUMBER: 08/525,596
;  PRIOR FILING DATE: 1995-10-26
;  PRIOR APPLICATION NUMBER: PCT/US94/03019
;  PRIOR FILING DATE: 1994-03-18
;  PRIOR APPLICATION NUMBER: 08/033,923
;  PRIOR FILING DATE: 1993-03-19
;  NUMBER OF SEQ ID NOS: 51
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 31
;   LENGTH: 375
;   TYPE: PRT
;   ORGANISM: Ovine
US-09-859-211-31

  Query Match             94.9%;  Score 112;  DB 9;  Length 375;
  Best Local Similarity   90.5%;  Pred. No. 6.6e-09;
  Matches   19;  Conservative    2;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |:||||||||||||||||:||
Db     315 FLFLQKYPHTHLVHQANPKGS 335


RESULT 28
US-09-454-540-4
; Sequence 4, Application US/09454540
; Patent No. US20010053358A1
;  GENERAL INFORMATION:
;    APPLICANT:  Se-Jin Lee and Alexandra McPherron
;    TITLE OF INVENTION:  GROWTH DIFFERENTIATION FACTOR-11
;    NUMBER OF SEQUENCES:  9
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Fish & Richardson P.C.
;      STREET:  4225 Executive Square, Suite 1400
;      CITY:  La Jolla
;      STATE:  California
;      COUNTRY:  US
;      ZIP:  92037
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/09/454,540
;      FILING DATE:  06-DEC-1999
;      CLASSIFICATION:
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  08/795,671
;      FILING DATE:  February 6, 1997
;      CLASSIFICATION:
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  HAILE, PH.D., LISA A.
;      REGISTRATION NUMBER:  38,347
;      REFERENCE/DOCKET NUMBER:  07265/106001
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  619/678-5070
;      TELEFAX:  619/678-5099
;  INFORMATION FOR SEQ ID NO:  4:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  126 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
US-09-454-540-4

  Query Match             86.4%;  Score 102;  DB 10;  Length 126;
  Best Local Similarity   81.0%;  Pred. No. 6.1e-08;
  Matches   17;  Conservative    3;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
             ::|:|||||||||  |||||||
Db      66 YMFMQKYPHTHLVQQANPRGS 86


RESULT 29
US-09-859-894A-4
; Sequence 4, Application US/09859894A
; Patent No. US20020150577A1
; GENERAL INFORMATION:
;  APPLICANT: THE JOHNS HOPKINS UNIVERSITY SCHOOL OF MEDICINE
;  APPLICANT:  Lee, Se-Jin
;  APPLICANT:  McPherron, Alexandra C.
;  TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR-11
;  FILE REFERENCE: JHU1200-9
;  CURRENT APPLICATION NUMBER: US/09/859,894A
;  CURRENT FILING DATE:  2001-05-16
;  PRIOR APPLICATION NUMBER: 09/019,901
;  PRIOR FILING DATE: 1998-02-06
;  PRIOR APPLICATION NUMBER: 08/795,671
;  PRIOR FILING DATE: 1997-02-06
;  PRIOR APPLICATION NUMBER: 08/706,958
;  PRIOR FILING DATE: 1996-09-03
;  PRIOR APPLICATION NUMBER: 08/272,763
;  PRIOR FILING DATE: 1994-07-08
;  NUMBER OF SEQ ID NOS: 11
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 4
;   LENGTH: 126
;   TYPE: PRT
;   ORGANISM: Mus musculus
US-09-859-894A-4

  Query Match             86.4%;  Score 102;  DB 10;  Length 126;
  Best Local Similarity   81.0%;  Pred. No. 6.1e-08;
  Matches   17;  Conservative    3;  Mismatches    1;  Indels    0;  Gaps    0;
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```
Qy      1 FVFLQKYPHTHLVHQANPRGS 21
          ::|:|||||||||| |||||||
Db     66 YMFMQKYPHTHLVQQANPRGS 86


RESULT 30
US-09-841-730-25
; Sequence 25, Application US/09841730
; Patent No. US20020157126A1
; GENERAL INFORMATION:
;  APPLICANT: Lee, Se-Jin
;  APPLICANT:  McPherron, Alexandra C.
;  TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR RECEPTORS,
;  TITLE OF INVENTION:  AGONISTS AND ANTAGONISTS THEREOF, AND METHODS OF USING SAME
;  FILE REFERENCE: JHU1470-2
;  CURRENT APPLICATION NUMBER: US/09/841,730
;  CURRENT FILING DATE:  2001-04-24
;  PRIOR APPLICATION NUMBER: 09/626,896
;  PRIOR FILING DATE: 2000-07-27
;  PRIOR APPLICATION NUMBER: 09/485,046
;  PRIOR FILING DATE: 2000-01-31
;  PRIOR APPLICATION NUMBER: PCT/US98/15598
;  PRIOR FILING DATE: 1998-07-28
;  PRIOR APPLICATION NUMBER: 60/054,461
;  PRIOR FILING DATE: 1997-08-01
;  NUMBER OF SEQ ID NOS: 29
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 25
;   LENGTH: 407
;   TYPE: PRT
;   ORGANISM: Homo sapiens
US-09-841-730-25

  Query Match             86.4%;  Score 102;  DB 9;  Length 407;
  Best Local Similarity   81.0%;  Pred. No. 2.1e-07;
  Matches   17;  Conservative    3;  Mismatches    1;  Indels    0;  Gaps    0;

Qy      1 FVFLQKYPHTHLVHQANPRGS 21
          ::|:|||||||||| |||||||
Db    347 YMFMQKYPHTHLVQQANPRGS 367


RESULT 31
US-09-454-540-2
; Sequence 2, Application US/09454540
; Patent No. US20010053358A1
;  GENERAL INFORMATION:
;    APPLICANT:  Se-Jin Lee and Alexandra McPherron
;    TITLE OF INVENTION:  GROWTH DIFFERENTIATION FACTOR-11
;    NUMBER OF SEQUENCES:  9
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Fish & Richardson P.C.
;      STREET:  4225 Executive Square, Suite 1400
;      CITY:  La Jolla
;      STATE:  California
;      COUNTRY:  US
;      ZIP:  92037
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/09/454,540
;      FILING DATE:  06-DEC-1999
;      CLASSIFICATION:
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  08/795,671
;      FILING DATE:  February 6, 1997
;      CLASSIFICATION:
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  HAILE, PH.D., LISA A.
;      REGISTRATION NUMBER:  38,347
;      REFERENCE/DOCKET NUMBER:  07265/106001
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  619/678-5070
;      TELEFAX:  619/678-5099
;  INFORMATION FOR SEQ ID NO:  2:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  407 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
US-09-454-540-2

  Query Match             86.4%;  Score 102;  DB 10;  Length 407;
  Best Local Similarity   81.0%;  Pred. No. 2.1e-07;
  Matches   17;  Conservative    3;  Mismatches    1;  Indels    0;  Gaps    0;

Qy      1 FVFLQKYPHTHLVHQANPRGS 21
          ::|:|||||||||| |||||||
Db    347 YMFMQKYPHTHLVQQANPRGS 367


RESULT 32
US-09-454-540-6
; Sequence 6, Application US/09454540
; Patent No. US20010053358A1
;  GENERAL INFORMATION:
;    APPLICANT:  Se-Jin Lee and Alexandra McPherron
;    TITLE OF INVENTION:  GROWTH DIFFERENTIATION FACTOR-11
;    NUMBER OF SEQUENCES:  9
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Fish & Richardson P.C.
;      STREET:  4225 Executive Square, Suite 1400
;      CITY:  La Jolla
;      STATE:  California
;      COUNTRY:  US
;      ZIP:  92037
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/09/454,540
;      FILING DATE:  06-DEC-1999
;      CLASSIFICATION:
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  08/795,671
;      FILING DATE:  February 6, 1997
;      CLASSIFICATION:
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  HAILE, PH.D., LISA A.
;      REGISTRATION NUMBER:  38,347
;      REFERENCE/DOCKET NUMBER:  07265/106001
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  619/678-5070
;      TELEFAX:  619/678-5099
;  INFORMATION FOR SEQ ID NO:  6:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  407 amino acids
;      TYPE:  amino acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
;    IMMEDIATE SOURCE:
;      CLONE:  GDF-11
;    FEATURE:
;      NAME/KEY:  Protein
;      LOCATION:  1..407
US-09-454-540-6

  Query Match             86.4%;  Score 102;  DB 10;  Length 407;
  Best Local Similarity   81.0%;  Pred. No. 2.1e-07;
```

```
  Matches   17;  Conservative    3;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           ::|:||||||||| |||||||
Db     347 YMFMQKYPHTHLVQQANPRGS 367


RESULT 33
US-09-859-894A-2
; Sequence 2, Application US/09859894A
; Patent No. US20020150577A1
; GENERAL INFORMATION:
;  APPLICANT: THE JOHNS HOPKINS UNIVERSITY SCHOOL OF MEDICINE
;  APPLICANT:  Lee, Se-Jin
;  APPLICANT:  McPherron, Alexandra C.
;  TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR-11
;  FILE REFERENCE: JHU1200-9
;  CURRENT APPLICATION NUMBER: US/09/859,894A
;  CURRENT FILING DATE:  2001-05-16
;  PRIOR APPLICATION NUMBER: 09/019,901
;  PRIOR FILING DATE: 1998-02-06
;  PRIOR APPLICATION NUMBER: 08/795,671
;  PRIOR FILING DATE: 1997-02-06
;  PRIOR APPLICATION NUMBER: 08/706,958
;  PRIOR FILING DATE: 1996-09-03
;  PRIOR APPLICATION NUMBER: 08/272,763
;  PRIOR FILING DATE: 1994-07-08
;  NUMBER OF SEQ ID NOS: 11
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 2
;   LENGTH: 407
;   TYPE: PRT
;   ORGANISM: Homo sapiens
US-09-859-894A-2

  Query Match             86.4%;  Score 102;  DB 10;  Length 407;
  Best Local Similarity   81.0%;  Pred. No. 2.1e-07;
  Matches   17;  Conservative    3;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           ::|:||||||||| |||||||
Db     347 YMFMQKYPHTHLVQQANPRGS 367


RESULT 34
US-09-813-398-33
; Sequence 33, Application US/09813398
; Patent No. US20020169292A1
; GENERAL INFORMATION:
;  APPLICANT: Bruce D. Weintraub
;  APPLICANT:  Mariusz W. Szkudlinski
;  APPLICANT:  University of Maryland
;  TITLE OF INVENTION: CYSTINE KNOT GROWTH FACTOR MUTANTS
;  FILE REFERENCE: UOFMD.003C1
;  CURRENT APPLICATION NUMBER: US/09/813,398
;  CURRENT FILING DATE:  2001-03-20
;  PRIOR APPLICATION NUMBER: PCT/US99/05908
;  PRIOR FILING DATE: 1999-03-19
;  PRIOR APPLICATION NUMBER: PCT/US98/19772
;  PRIOR FILING DATE: 1998-09-22
;  NUMBER OF SEQ ID NOS: 41
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 33
;   LENGTH: 408
;   TYPE: PRT
;   ORGANISM: HOMO SAPIEN
US-09-813-398-33

  Query Match             86.4%;  Score 102;  DB 9;  Length 408;
  Best Local Similarity   81.0%;  Pred. No. 2.1e-07;
  Matches   17;  Conservative    3;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           ::|:||||||||| |||||||
Db     348 YMFMQKYPHTHLVQQANPRGS 368


RESULT 35
US-09-205-658-317
; Sequence 317, Application US/09205658
; Patent No. US20010029617A1
; GENERAL INFORMATION:
;  APPLICANT: Ruvkun, Gary
;  APPLICANT: Ogg, Scott
;  TITLE OF INVENTION: THERAPEUTIC AND DIAGNOSTIC TOOLS FOR
;  TITLE OF INVENTION: IMPAIRED GLUCOSE TOLERANCE CONDITIONS
;  FILE REFERENCE: 00786/351004
;  CURRENT APPLICATION NUMBER: US/09/205,658
;  CURRENT FILING DATE: 1998-12-03
;  EARLIER APPLICATION NUMBER: 08/857,076
;  EARLIER FILING DATE: 1997-05-15
;  EARLIER APPLICATION NUMBER: 08/888,534
;  EARLIER FILING DATE: 1997-07-07
;  EARLIER APPLICATION NUMBER: US98/10080
;  EARLIER FILING DATE: 1998-05-15
;  NUMBER OF SEQ ID NOS: 328
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 317
;   LENGTH: 128
;   TYPE: PRT
;   ORGANISM: Caenorhabditis elegans
US-09-205-658-317

  Query Match             83.1%;  Score 98;  DB 10;  Length 128;
  Best Local Similarity   80.0%;  Pred. No. 2.4e-07;
  Matches   16;  Conservative    3;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRG 20
           ::|:|||||||||| ||||||
Db      67 YMFMQKYPHTHLVQQANPRG 86


RESULT 36
US-09-841-730-29
; Sequence 29, Application US/09841730
; Patent No. US20020157126A1
; GENERAL INFORMATION:
;  APPLICANT: Lee, Se-Jin
;  APPLICANT:  McPherron, Alexandra C.
;  TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR RECEPTORS,
;  TITLE OF INVENTION:  AGONISTS AND ANTAGONISTS THEREOF, AND METHODS OF USING SAME
;  FILE REFERENCE: JHU1470-2
;  CURRENT APPLICATION NUMBER: US/09/841,730
;  CURRENT FILING DATE:  2001-04-24
;  PRIOR APPLICATION NUMBER: 09/626,896
;  PRIOR FILING DATE: 2000-07-27
;  PRIOR APPLICATION NUMBER: 09/485,046
;  PRIOR FILING DATE: 2000-01-31
;  PRIOR APPLICATION NUMBER: PCT/US98/15598
;  PRIOR FILING DATE: 1998-07-28
;  PRIOR APPLICATION NUMBER: 60/054,461
;  PRIOR FILING DATE: 1997-08-01
;  NUMBER OF SEQ ID NOS: 29
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 29
;   LENGTH: 136
;   TYPE: PRT
;   ORGANISM: Salmon-2
US-09-841-730-29

  Query Match             77.1%;  Score 91;  DB 9;  Length 136;
  Best Local Similarity   71.4%;  Pred. No. 2.7e-06;
  Matches   15;  Conservative    5;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           :: ||||||||||::|||||:
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Db      76 YMHLQKYPHTHLVNKANPRGT 96


RESULT 37
US-09-841-730-27
; Sequence 27, Application US/09841730
; Patent No. US20020157126A1
; GENERAL INFORMATION:
;  APPLICANT: Lee, Se-Jin
;  APPLICANT:  McPherron, Alexandra C.
;  TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR RECEPTORS,
;  TITLE OF INVENTION:  AGONISTS AND ANTAGONISTS THEREOF, AND METHODS OF USING SAME
;  FILE REFERENCE: JHU1470-2
;  CURRENT APPLICATION NUMBER: US/09/841,730
;  CURRENT FILING DATE:  2001-04-24
;  PRIOR APPLICATION NUMBER: 09/626,896
;  PRIOR FILING DATE: 2000-07-27
;  PRIOR APPLICATION NUMBER: 09/485,046
;  PRIOR FILING DATE: 2000-01-31
;  PRIOR APPLICATION NUMBER: PCT/US98/15598
;  PRIOR FILING DATE: 1998-07-28
;  PRIOR APPLICATION NUMBER: 60/054,461
;  PRIOR FILING DATE: 1997-08-01
;  NUMBER OF SEQ ID NOS: 29
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 27
;   LENGTH: 157
;   TYPE: PRT
;   ORGANISM: Salmon-1
US-09-841-730-27

  Query Match             77.1%;  Score 91;  DB 9;  Length 157;
  Best Local Similarity   71.4%;  Pred. No. 3.1e-06;
  Matches   15;  Conservative    5;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           :: ||||||||||::|||||:
Db      97 YMHLQKYPHTHLVNKANPRGT 117


RESULT 38
US-09-841-730-20
; Sequence 20, Application US/09841730
; Patent No. US20020157126A1
; GENERAL INFORMATION:
;  APPLICANT: Lee, Se-Jin
;  APPLICANT:  McPherron, Alexandra C.
;  TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR RECEPTORS,
;  TITLE OF INVENTION:  AGONISTS AND ANTAGONISTS THEREOF, AND METHODS OF USING SAME
;  FILE REFERENCE: JHU1470-2
;  CURRENT APPLICATION NUMBER: US/09/841,730
;  CURRENT FILING DATE:  2001-04-24
;  PRIOR APPLICATION NUMBER: 09/626,896
;  PRIOR FILING DATE: 2000-07-27
;  PRIOR APPLICATION NUMBER: 09/485,046
;  PRIOR FILING DATE: 2000-01-31
;  PRIOR APPLICATION NUMBER: PCT/US98/15598
;  PRIOR FILING DATE: 1998-07-28
;  PRIOR APPLICATION NUMBER: 60/054,461
;  PRIOR FILING DATE: 1997-08-01
;  NUMBER OF SEQ ID NOS: 29
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 20
;   LENGTH: 374
;   TYPE: PRT
;   ORGANISM: Danio rerio
US-09-841-730-20

  Query Match             76.3%;  Score 90;  DB 9;  Length 374;
  Best Local Similarity   66.7%;  Pred. No. 1.1e-05;
  Matches   14;  Conservative    7;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           :::|||||||||||::|:|||:
Db     314 YMYLQKYPHTHLVNKASPRGT 334


RESULT 39
US-09-867-550-1696
; Sequence 1696, Application US/09867550
; Patent No. US20020082206A1
; GENERAL INFORMATION:
;  APPLICANT: Leach, Martin D.
;  APPLICANT:  Mehraban, Fuad,
;  APPLICANT:  Conley, Pamela
;  APPLICANT:  Law, Debbie
;  APPLICANT:  Topper, James
;  TITLE OF INVENTION: No. US20020082206A1el Polynucleotides from Atherogenic Cells and
;  TITLE OF INVENTION:  Thereby
;  FILE REFERENCE: 21402-013 (Cura-313)
;  CURRENT APPLICATION NUMBER: US/09/867,550
;  CURRENT FILING DATE:  2001-09-20
;  PRIOR APPLICATION NUMBER: USSN 60/208,427
;  PRIOR FILING DATE: 2000-05-30
;  NUMBER OF SEQ ID NOS: 2125
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 1696
;   LENGTH: 95
;   TYPE: PRT
;   ORGANISM: Homo sapiens
;   FEATURE:
;   NAME/KEY: VARIANT
;   LOCATION: (66)
;   OTHER INFORMATION: Wherein Xaa may be any one of Cys or Phe or Ser or Tyr
US-09-867-550-1696

  Query Match             39.0%;  Score 46;  DB 10;  Length 95;
  Best Local Similarity   60.0%;  Pred. No. 6.6;
  Matches    9;  Conservative    2;  Mismatches    2;  Indels    2;  Gaps    1;

Qy       7 YPHTHLVHQANPRGS 21
           :| |||:||  | ||
Db      79 FPTTHLIHQ--PAGS 91


RESULT 40
US-09-975-719-273
; Sequence 273, Application US/09975719
; Publication No. US20030022349A1
; GENERAL INFORMATION:
;  APPLICANT: Ausubel, Frederick M.
;  APPLICANT:  Rahme, Laurence G.
;  TITLE OF INVENTION: VIRULENCE-ASSOCIATED NUCLEIC ACID
;  TITLE OF INVENTION:  SEQUENCES AND USES THEREOF
;  FILE REFERENCE: 00786/361003
;  CURRENT APPLICATION NUMBER: US/09/975,719
;  CURRENT FILING DATE:  2001-10-10
;  PRIOR APPLICATION NUMBER: US 09/199,637
;  PRIOR FILING DATE: 1998-11-25
;  PRIOR APPLICATION NUMBER: US 60/066,517
;  PRIOR FILING DATE: 1997-11-25
;  NUMBER OF SEQ ID NOS: 437
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 273
;   LENGTH: 989
;   TYPE: PRT
;   ORGANISM: Pseudomonas aeruginosa
US-09-975-719-273

  Query Match             39.0%;  Score 46;  DB 9;  Length 989;
  Best Local Similarity   47.4%;  Pred. No. 75;
  Matches    9;  Conservative    3;  Mismatches    7;  Indels    0;  Gaps    0;

Qy       2 VFLQKYPHTHLVHQANPRG 20
           ||| :: | ||:  |  ||
Db     639 VFLARFVHQHLLEAALQRG 657
```

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RESULT 41
US-09-843-676-8
; Sequence 8, Application US/09843676
; Patent No. US20020164786A1
;  GENERAL INFORMATION:
;       APPLICANT: Cech, Thomas R.
;                  Lingner, Joachim
;                  Nakamura, Toru
;                  Chapman, Karen B.
;                  Morin, Gregg B.
;                  Harley, Calvin
;                  Andrews, William H.
;       TITLE OF INVENTION: No. US20020164786A1el Telomerase
;       NUMBER OF SEQUENCES: 225
;       CORRESPONDENCE ADDRESS:
;            ADDRESSEE: Townsend and Townsend and Crew LLP
;            STREET: Two Embarcadero Center, 8th Floor
;            CITY: San Francisco
;            STATE: California
;            COUNTRY: United States of America
;            ZIP: 94111
;       COMPUTER READABLE FORM:
;            MEDIUM TYPE: Floppy disk
;            COMPUTER: IBM PC compatible
;            OPERATING SYSTEM: PC-DOS/MS-DOS
;            SOFTWARE: PatentIn Release #1.0, Version #1.30
;       CURRENT APPLICATION DATA:
;            APPLICATION NUMBER: US/09/843,676
;            FILING DATE: 26-Apr-2001
;            CLASSIFICATION: 536
;       PRIOR APPLICATION DATA:
;            APPLICATION NUMBER: US/08/854,050
;            FILING DATE: 09-MAY-1997
;            APPLICATION NUMBER: US 08/846,017
;            FILING DATE: 25-APR-1997
;            APPLICATION NUMBER: US 08/844,419
;            FILING DATE: 18-APR-1997
;            APPLICATION NUMBER: US 08/724,643
;            FILING DATE: 01-OCT-1996
;       ATTORNEY/AGENT INFORMATION:
;            NAME: Apple,  Randolph T.
;            REGISTRATION NUMBER: 36,429
;            REFERENCE/DOCKET NUMBER: 015389-002930US
;       TELECOMMUNICATION INFORMATION:
;            TELEPHONE: (415) 576-0200
;            TELEFAX: (415) 576-0300
;   INFORMATION FOR SEQ ID NO: 8:
;       SEQUENCE CHARACTERISTICS:
;            LENGTH: 872 amino acids
;            TYPE: amino acid
;            STRANDEDNESS: No. US20020164786A1 Relevant
;            TOPOLOGY: No. US20020164786A1 Relevant
;       MOLECULE TYPE: protein
;       SEQUENCE DESCRIPTION: SEQ ID NO: 8:
US-09-843-676-8

  Query Match             37.7%;  Score 44.5;  DB 9;  Length 872;
  Best Local Similarity   52.6%;  Pred. No. 1.1e+02;
  Matches   10;  Conservative    3;  Mismatches    5;  Indels    1;  Gaps    1;

Qy       1 FVFLQKYPH-THLVHQANP 18
           | |||::|  ||:  || |
Db     350 FKFLQEFPRLTHVSQQAIP 368


RESULT 42
US-09-843-676-54
; Sequence 54, Application US/09843676
; Patent No. US20020164786A1
;  GENERAL INFORMATION:
;       APPLICANT: Cech, Thomas R.
;                  Lingner, Joachim
;                  Nakamura, Toru
;                  Chapman, Karen B.
;                  Morin, Gregg B.
;                  Harley, Calvin
;                  Andrews, William H.
;       TITLE OF INVENTION: No. US20020164786A1el Telomerase
;       NUMBER OF SEQUENCES: 225
;       CORRESPONDENCE ADDRESS:
;            ADDRESSEE: Townsend and Townsend and Crew LLP
;            STREET: Two Embarcadero Center, 8th Floor
;            CITY: San Francisco
;            STATE: California
;            COUNTRY: United States of America
;            ZIP: 94111
;       COMPUTER READABLE FORM:
;            MEDIUM TYPE: Floppy disk
;            COMPUTER: IBM PC compatible
;            OPERATING SYSTEM: PC-DOS/MS-DOS
;            SOFTWARE: PatentIn Release #1.0, Version #1.30
;       CURRENT APPLICATION DATA:
;            APPLICATION NUMBER: US/09/843,676
;            FILING DATE: 26-Apr-2001
;            CLASSIFICATION: 536
;       PRIOR APPLICATION DATA:
;            APPLICATION NUMBER: US/08/854,050
;            FILING DATE: 09-MAY-1997
;            APPLICATION NUMBER: US 08/846,017
;            FILING DATE: 25-APR-1997
;            APPLICATION NUMBER: US 08/844,419
;            FILING DATE: 18-APR-1997
;            APPLICATION NUMBER: US 08/724,643
;            FILING DATE: 01-OCT-1996
;       ATTORNEY/AGENT INFORMATION:
;            NAME: Apple,  Randolph T.
;            REGISTRATION NUMBER: 36,429
;            REFERENCE/DOCKET NUMBER: 015389-002930US
;       TELECOMMUNICATION INFORMATION:
;            TELEPHONE: (415) 576-0200
;            TELEFAX: (415) 576-0300
;   INFORMATION FOR SEQ ID NO: 54:
;       SEQUENCE CHARACTERISTICS:
;            LENGTH: 872 amino acids
;            TYPE: amino acid
;            STRANDEDNESS: No. US20020164786A1 Relevant
;            TOPOLOGY: No. US20020164786A1 Relevant
;       MOLECULE TYPE: peptide
;       SEQUENCE DESCRIPTION: SEQ ID NO: 54:
US-09-843-676-54

  Query Match             37.7%;  Score 44.5;  DB 9;  Length 872;
  Best Local Similarity   52.6%;  Pred. No. 1.1e+02;
  Matches   10;  Conservative    3;  Mismatches    5;  Indels    1;  Gaps    1;

Qy       1 FVFLQKYPH-THLVHQANP 18
           | |||::|  ||:  || |
Db     350 FKFLQEFPRLTHVSQQAIP 368


RESULT 43
US-09-766-253-8
; Sequence 8, Application US/09766253
; Publication No. US20020187471A1
;  GENERAL INFORMATION:
;       APPLICANT: Cech, Thomas R.
;                  Lingner, Joachim
;                  Nakamura, Toru
;                  Chapman, Karen B.
;                  Morin, Gregg B.
;                  Harley, Calvin
;                  Andrews, William H.
;       TITLE OF INVENTION: No. US20020187471A1el Telomerase
;       NUMBER OF SEQUENCES: 171
```

```
;       CORRESPONDENCE ADDRESS:
;            ADDRESSEE: Townsend and Townsend and Crew LLP
;            STREET: Two Embarcadero Center, 8th Floor
;            CITY: San Francisco
;            STATE: California
;            COUNTRY: United States of America
;            ZIP: 94111
;       COMPUTER READABLE FORM:
;            MEDIUM TYPE: Floppy disk
;            COMPUTER: IBM PC compatible
;            OPERATING SYSTEM: PC-DOS/MS-DOS
;            SOFTWARE: PatentIn Release #1.0, Version #1.30
;       CURRENT APPLICATION DATA:
;            APPLICATION NUMBER: US/09/766,253
;            FILING DATE: 19-Jan-2001
;            CLASSIFICATION: <Unknown>
;       PRIOR APPLICATION DATA:
;            APPLICATION NUMBER: 08/846,017
;            FILING DATE: 1997-04-25
;            APPLICATION NUMBER: US 08/724,643
;            FILING DATE: 01-OCT-1996
;       ATTORNEY/AGENT INFORMATION:
;            NAME: Apple,  Randolph T.
;            REGISTRATION NUMBER: 36,429
;            REFERENCE/DOCKET NUMBER: 015389-002920US
;       TELECOMMUNICATION INFORMATION:
;            TELEPHONE: (415) 576-0200
;            TELEFAX: (415) 576-0300
;   INFORMATION FOR SEQ ID NO: 8:
;       SEQUENCE CHARACTERISTICS:
;            LENGTH: 872 amino acids
;            TYPE: amino acid
;            STRANDEDNESS: not relevant
;            TOPOLOGY: not relevant
;       MOLECULE TYPE: protein
;       SEQUENCE DESCRIPTION: SEQ ID NO: 8:
US-09-766-253-8

  Query Match             37.7%;  Score 44.5;  DB 9;  Length 872;
  Best Local Similarity   52.6%;  Pred. No. 1.1e+02;
  Matches   10;  Conservative    3;  Mismatches    5;  Indels    1;  Gaps    1;

Qy      1 FVFLQKYPH-THLVHQANP 18
          | |||::|  ||:  || |
Db    350 FKFLQEFPRLTHVSQQAIP 368


RESULT 44
US-09-766-253-54
; Sequence 54, Application US/09766253
; Publication No. US20020187471A1
;   GENERAL INFORMATION:
;       APPLICANT: Cech, Thomas R.
;                  Lingner, Joachim
;                  Nakamura, Toru
;                  Chapman, Karen B.
;                  Morin, Gregg B.
;                  Harley, Calvin
;                  Andrews, William H.
;       TITLE OF INVENTION: No. US20020187471A1el Telomerase
;       NUMBER OF SEQUENCES: 171
;       CORRESPONDENCE ADDRESS:
;            ADDRESSEE: Townsend and Townsend and Crew LLP
;            STREET: Two Embarcadero Center, 8th Floor
;            CITY: San Francisco
;            STATE: California
;            COUNTRY: United States of America
;            ZIP: 94111
;       COMPUTER READABLE FORM:
;            MEDIUM TYPE: Floppy disk
;            COMPUTER: IBM PC compatible
;            OPERATING SYSTEM: PC-DOS/MS-DOS
;            SOFTWARE: PatentIn Release #1.0, Version #1.30
;       CURRENT APPLICATION DATA:
;            APPLICATION NUMBER: US/09/766,253
;            FILING DATE: 19-Jan-2001
;            CLASSIFICATION: <Unknown>
;       PRIOR APPLICATION DATA:
;            APPLICATION NUMBER: 08/846,017
;            FILING DATE: 1997-04-25
;            APPLICATION NUMBER: US 08/724,643
;            FILING DATE: 01-OCT-1996
;       ATTORNEY/AGENT INFORMATION:
;            NAME: Apple,  Randolph T.
;            REGISTRATION NUMBER: 36,429
;            REFERENCE/DOCKET NUMBER: 015389-002920US
;       TELECOMMUNICATION INFORMATION:
;            TELEPHONE: (415) 576-0200
;            TELEFAX: (415) 576-0300
;   INFORMATION FOR SEQ ID NO: 54:
;       SEQUENCE CHARACTERISTICS:
;            LENGTH: 872 amino acids
;            TYPE: amino acid
;            STRANDEDNESS: not relevant
;            TOPOLOGY: not relevant
;       MOLECULE TYPE: peptide
;       SEQUENCE DESCRIPTION: SEQ ID NO: 54:
US-09-766-253-54

  Query Match             37.7%;  Score 44.5;  DB 9;  Length 872;
  Best Local Similarity   52.6%;  Pred. No. 1.1e+02;
  Matches   10;  Conservative    3;  Mismatches    5;  Indels    1;  Gaps    1;

Qy      1 FVFLQKYPH-THLVHQANP 18
          | |||::|  ||:  || |
Db    350 FKFLQEFPRLTHVSQQAIP 368


RESULT 45
US-09-438-486-8
; Sequence 8, Application US/09438486
; Publication No. US20030009019A1
;  GENERAL INFORMATION:
;    APPLICANT:  Cech, Thomas R.
;    APPLICANT:  Lingner, Joachim
;    APPLICANT:  Nakamura, Toru
;    APPLICANT:  Chapman, Karen B.
;    APPLICANT:  Morin, Gregg B.
;    APPLICANT:  Harley, Calvin
;    APPLICANT:  Andrews, William H.
;    TITLE OF INVENTION:  No. US20030009019A1el Telomerase
;    NUMBER OF SEQUENCES:  223
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Townsend and Townsend and Crew LLP
;      STREET:  Two Embarcadero Center, 8th Floor
;      CITY:  San Francisco
;      STATE:  California
;      COUNTRY:  United States of America
;      ZIP:  94111-3834
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.30
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/09/438,486
;      FILING DATE:  12-NOV-1999
;      CLASSIFICATION:  536
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US 08/851,843
;      FILING DATE:  06-MAY-1997
;      CLASSIFICATION:  536
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US 08/846,017
;      FILING DATE:  25-APR-1997
;      CLASSIFICATION:  536
```

```
;     PRIOR APPLICATION DATA:
;       APPLICATION NUMBER:  US 08/844,419
;       FILING DATE:  18-APR-1997
;       CLASSIFICATION:  536
;     PRIOR APPLICATION DATA:
;       APPLICATION NUMBER:  US 08/724,643
;       FILING DATE:  01-OCT-1996
;       CLASSIFICATION:  536
;     ATTORNEY/AGENT INFORMATION:
;       NAME:  Apple,  Randolph T.
;       REGISTRATION NUMBER:  36,429
;       REFERENCE/DOCKET NUMBER:  015389-002931US
;     TELECOMMUNICATION INFORMATION:
;       TELEPHONE:  (415) 576-0200
;       TELEFAX:  (415) 576-0300
;   INFORMATION FOR SEQ ID NO:  8:
;     SEQUENCE CHARACTERISTICS:
;       LENGTH:  872 amino acids
;       TYPE:  amino acid
;       STRANDEDNESS:  not relevant
;       TOPOLOGY:  not relevant
;     MOLECULE TYPE:  protein
US-09-438-486-8

  Query Match             37.7%;  Score 44.5;  DB 9;  Length 872;
  Best Local Similarity   52.6%;  Pred. No. 1.1e+02;
  Matches   10;  Conservative    3;  Mismatches    5;  Indels    1;  Gaps    1;

Qy       1 FVFLQKYPH-THLVHQANP 18
           | |||::|  ||:  || |
Db     350 FKFLQEFPRLTHVSQQAIP 368


RESULT 46
US-09-438-486-54
; Sequence 54, Application US/09438486
; Publication No. US20030009019A1
;  GENERAL INFORMATION:
;     APPLICANT:  Cech, Thomas R.
;     APPLICANT:  Lingner, Joachim
;     APPLICANT:  Nakamura, Toru
;     APPLICANT:  Chapman, Karen B.
;     APPLICANT:  Morin, Gregg B.
;     APPLICANT:  Harley, Calvin
;     APPLICANT:  Andrews, William H.
;     TITLE OF INVENTION:  No. US20030009019A1el Telomerase
;     NUMBER OF SEQUENCES:  223
;     CORRESPONDENCE ADDRESS:
;       ADDRESSEE:  Townsend and Townsend and Crew LLP
;       STREET:  Two Embarcadero Center, 8th Floor
;       CITY:  San Francisco
;       STATE:  California
;       COUNTRY:  United States of America
;       ZIP:  94111-3834
;     COMPUTER READABLE FORM:
;       MEDIUM TYPE:  Floppy disk
;       COMPUTER:  IBM PC compatible
;       OPERATING SYSTEM:  PC-DOS/MS-DOS
;       SOFTWARE:  PatentIn Release #1.0, Version #1.30
;     CURRENT APPLICATION DATA:
;       APPLICATION NUMBER:  US/09/438,486
;       FILING DATE:  12-NOV-1999
;       CLASSIFICATION:  536
;     PRIOR APPLICATION DATA:
;       APPLICATION NUMBER:  US 08/851,843
;       FILING DATE:  06-MAY-1997
;       CLASSIFICATION:  536
;     PRIOR APPLICATION DATA:
;       APPLICATION NUMBER:  US 08/846,017
;       FILING DATE:  25-APR-1997
;       CLASSIFICATION:  536
;     PRIOR APPLICATION DATA:
;       APPLICATION NUMBER:  US 08/844,419
;       FILING DATE:  18-APR-1997
;       CLASSIFICATION:  536
;     PRIOR APPLICATION DATA:
;       APPLICATION NUMBER:  US 08/724,643
;       FILING DATE:  01-OCT-1996
;       CLASSIFICATION:  536
;     ATTORNEY/AGENT INFORMATION:
;       NAME:  Apple,  Randolph T.
;       REGISTRATION NUMBER:  36,429
;       REFERENCE/DOCKET NUMBER:  015389-002931US
;     TELECOMMUNICATION INFORMATION:
;       TELEPHONE:  (415) 576-0200
;       TELEFAX:  (415) 576-0300
;   INFORMATION FOR SEQ ID NO:  54:
;     SEQUENCE CHARACTERISTICS:
;       LENGTH:  872 amino acids
;       TYPE:  amino acid
;       STRANDEDNESS:  not relevant
;       TOPOLOGY:  not relevant
;     MOLECULE TYPE:  peptide
US-09-438-486-54

  Query Match             37.7%;  Score 44.5;  DB 9;  Length 872;
  Best Local Similarity   52.6%;  Pred. No. 1.1e+02;
  Matches   10;  Conservative    3;  Mismatches    5;  Indels    1;  Gaps    1;

Qy       1 FVFLQKYPH-THLVHQANP 18
           | |||::|  ||:  || |
Db     350 FKFLQEFPRLTHVSQQAIP 368


RESULT 47
US-10-053-758-8
; Sequence 8, Application US/10053758
; Publication No. US20030032075A1
;   GENERAL INFORMATION:
;       APPLICANT: Cech, Thomas R.
;                  Lingner, Joachim
;                  Nakamura, Toru
;                  Chapman, Karen B.
;                  Morin, Gregg B.
;                  Harley, Calvin
;                  Andrews, William H.
;       TITLE OF INVENTION: No. US20030032075A1el Telomerase
;       NUMBER OF SEQUENCES: 225
;       CORRESPONDENCE ADDRESS:
;            ADDRESSEE: Townsend and Townsend and Crew LLP
;            STREET: Two Embarcadero Center, 8th Floor
;            CITY: San Francisco
;            STATE: California
;            COUNTRY: United States of America
;            ZIP: 94111
;       COMPUTER READABLE FORM:
;            MEDIUM TYPE: Floppy disk
;            COMPUTER: IBM PC compatible
;            OPERATING SYSTEM: PC-DOS/MS-DOS
;            SOFTWARE: PatentIn Release #1.0, Version #1.30
;       CURRENT APPLICATION DATA:
;            APPLICATION NUMBER: US/10/053,758
;            FILING DATE: 18-Jan-2002
;            CLASSIFICATION: 536
;       PRIOR APPLICATION DATA:
;            APPLICATION NUMBER: US/08/854,050
;            FILING DATE: 09-MAY-1997
;            APPLICATION NUMBER: US 08/851,843
;            FILING DATE: 06-MAY-1997
;            APPLICATION NUMBER: US 08/846,017
;            FILING DATE: 25-APR-1997
;            APPLICATION NUMBER: US 08/844,419
;            FILING DATE: 18-APR-1997
;            APPLICATION NUMBER: US 08/724,643
;            FILING DATE: 01-OCT-1996
;       ATTORNEY/AGENT INFORMATION:
```

```
;             NAME: Apple,  Randolph T.
;             REGISTRATION NUMBER: 36,429
;             REFERENCE/DOCKET NUMBER: 015389-002930US
;       TELECOMMUNICATION INFORMATION:
;             TELEPHONE: (415) 576-0200
;             TELEFAX: (415) 576-0300
;   INFORMATION FOR SEQ ID NO: 8:
;       SEQUENCE CHARACTERISTICS:
;             LENGTH: 872 amino acids
;             TYPE: amino acid
;             STRANDEDNESS: No. US20030032075A1 Relevant
;             TOPOLOGY: No. US20030032075A1 Relevant
;       MOLECULE TYPE: protein
;       SEQUENCE DESCRIPTION: SEQ ID NO: 8:
US-10-053-758-8

  Query Match             37.7%;  Score 44.5;  DB 9;  Length 872;
  Best Local Similarity   52.6%;  Pred. No. 1.1e+02;
  Matches   10;  Conservative    3;  Mismatches    5;  Indels    1;  Gaps    1;

Qy      1 FVFLQKYPH-THLVHQANP 18
          | |||::|  ||:  || |
Db    350 FKFLQEFPRLTHVSQQAIP 368


RESULT 48
US-10-053-758-54
; Sequence 54, Application US/10053758
; Publication No. US20030032075A1
;   GENERAL INFORMATION:
;       APPLICANT: Cech, Thomas R.
;                  Lingner, Joachim
;                  Nakamura, Toru
;                  Chapman, Karen B.
;                  Morin, Gregg B.
;                  Harley, Calvin
;                  Andrews, William H.
;       TITLE OF INVENTION: No. US20030032075A1el Telomerase
;       NUMBER OF SEQUENCES: 225
;       CORRESPONDENCE ADDRESS:
;             ADDRESSEE: Townsend and Townsend and Crew LLP
;             STREET: Two Embarcadero Center, 8th Floor
;             CITY: San Francisco
;             STATE: California
;             COUNTRY: United States of America
;             ZIP: 94111
;       COMPUTER READABLE FORM:
;             MEDIUM TYPE: Floppy disk
;             COMPUTER: IBM PC compatible
;             OPERATING SYSTEM: PC-DOS/MS-DOS
;             SOFTWARE: PatentIn Release #1.0, Version #1.30
;       CURRENT APPLICATION DATA:
;             APPLICATION NUMBER: US/10/053,758
;             FILING DATE: 18-Jan-2002
;             CLASSIFICATION: 536
;       PRIOR APPLICATION DATA:
;             APPLICATION NUMBER: US/08/854,050
;             FILING DATE: 09-MAY-1997
;             APPLICATION NUMBER: US 08/851,843
;             FILING DATE: 06-MAY-1997
;             APPLICATION NUMBER: US 08/846,017
;             FILING DATE: 25-APR-1997
;             APPLICATION NUMBER: US 08/844,419
;             FILING DATE: 18-APR-1997
;             APPLICATION NUMBER: US 08/724,643
;             FILING DATE: 01-OCT-1996
;       ATTORNEY/AGENT INFORMATION:
;             NAME: Apple,  Randolph T.
;             REGISTRATION NUMBER: 36,429
;             REFERENCE/DOCKET NUMBER: 015389-002930US
;       TELECOMMUNICATION INFORMATION:
;             TELEPHONE: (415) 576-0200
;             TELEFAX: (415) 576-0300
;   INFORMATION FOR SEQ ID NO: 54:
;       SEQUENCE CHARACTERISTICS:
;             LENGTH: 872 amino acids
;             TYPE: amino acid
;             STRANDEDNESS: No. US20030032075A1 Relevant
;             TOPOLOGY: No. US20030032075A1 Relevant
;       MOLECULE TYPE: peptide
;       SEQUENCE DESCRIPTION: SEQ ID NO: 54:
US-10-053-758-54

  Query Match             37.7%;  Score 44.5;  DB 9;  Length 872;
  Best Local Similarity   52.6%;  Pred. No. 1.1e+02;
  Matches   10;  Conservative    3;  Mismatches    5;  Indels    1;  Gaps    1;

Qy      1 FVFLQKYPH-THLVHQANP 18
          | |||::|  ||:  || |
Db    350 FKFLQEFPRLTHVSQQAIP 368


RESULT 49
US-10-054-295-8
; Sequence 8, Application US/10054295
; Publication No. US20030044953A1
;   GENERAL INFORMATION:
;       APPLICANT: Cech, Thomas R.
;                  Lingner, Joachim
;                  Nakamura, Toru
;                  Chapman, Karen B.
;                  Morin, Gregg B.
;                  Harley, Calvin
;                  Andrews, William H.
;       TITLE OF INVENTION: No. US20030044953A1el Telomerase
;       NUMBER OF SEQUENCES: 225
;       CORRESPONDENCE ADDRESS:
;             ADDRESSEE: Townsend and Townsend and Crew LLP
;             STREET: Two Embarcadero Center, 8th Floor
;             CITY: San Francisco
;             STATE: California
;             COUNTRY: United States of America
;             ZIP: 94111
;       COMPUTER READABLE FORM:
;             MEDIUM TYPE: Floppy disk
;             COMPUTER: IBM PC compatible
;             OPERATING SYSTEM: PC-DOS/MS-DOS
;             SOFTWARE: PatentIn Release #1.0, Version #1.30
;       CURRENT APPLICATION DATA:
;             APPLICATION NUMBER: US/10/054,295
;             FILING DATE: 18-Jan-2002
;             CLASSIFICATION: 536
;       PRIOR APPLICATION DATA:
;             APPLICATION NUMBER: 08/854,050
;             FILING DATE: <Unknown>
;             APPLICATION NUMBER: US 08/846,017
;             FILING DATE: 25-APR-1997
;             APPLICATION NUMBER: US 08/844,419
;             FILING DATE: 18-APR-1997
;             APPLICATION NUMBER: US 08/724,643
;             FILING DATE: 01-OCT-1996
;       ATTORNEY/AGENT INFORMATION:
;             NAME: Apple,  Randolph T.
;             REGISTRATION NUMBER: 36,429
;             REFERENCE/DOCKET NUMBER: 015389-002930US
;       TELECOMMUNICATION INFORMATION:
;             TELEPHONE: (415) 576-0200
;             TELEFAX: (415) 576-0300
;   INFORMATION FOR SEQ ID NO: 8:
;       SEQUENCE CHARACTERISTICS:
;             LENGTH: 872 amino acids
;             TYPE: amino acid
;             STRANDEDNESS: No. US20030044953A1 Relevant
;             TOPOLOGY: No. US20030044953A1 Relevant
;       MOLECULE TYPE: protein
;       SEQUENCE DESCRIPTION: SEQ ID NO: 8:
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US-10-054-295-8

Query Match 37.7%; Score 44.5; DB 9; Length 872;
Best Local Similarity 52.6%; Pred. No. 1.1e+02;
Matches 10; Conservative 3; Mismatches 5; Indels 1; Gaps 1;

Qy 1 FVFLQKYPH-THLVHQANP 18
Db 350 FKFLQEFPRLTHVSQQAIP 368

RESULT 50
US-10-054-295-54
; Sequence 54, Application US/10054295
; Publication No. US20030044953A1
; GENERAL INFORMATION:
; APPLICANT: Cech, Thomas R.
; Lingner, Joachim
; Nakamura, Toru
; Chapman, Karen B.
; Morin, Gregg B.
; Harley, Calvin
; Andrews, William H.
; TITLE OF INVENTION: No. US20030044953A1el Telomerase
; NUMBER OF SEQUENCES: 225
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Townsend and Townsend and Crew LLP
; STREET: Two Embarcadero Center, 8th Floor
; CITY: San Francisco
; STATE: California
; COUNTRY: United States of America
; ZIP: 94111
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/10/054,295
; FILING DATE: 18-Jan-2002
; CLASSIFICATION: 536
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: 08/854,050
; FILING DATE: <Unknown>
; APPLICATION NUMBER: US 08/846,017
; FILING DATE: 25-APR-1997
; APPLICATION NUMBER: US 08/844,419
; FILING DATE: 18-APR-1997
; APPLICATION NUMBER: US 08/724,643
; FILING DATE: 01-OCT-1996
; ATTORNEY/AGENT INFORMATION:
; NAME: Apple, Randolph T.
; REGISTRATION NUMBER: 36,429
; REFERENCE/DOCKET NUMBER: 015389-002930US
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (415) 576-0200
; TELEFAX: (415) 576-0300
; INFORMATION FOR SEQ ID NO: 54:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 872 amino acids
; TYPE: amino acid
; STRANDEDNESS: No. US20030044953A1 Relevant
; TOPOLOGY: No. US20030044953A1 Relevant
; MOLECULE TYPE: peptide
; SEQUENCE DESCRIPTION: SEQ ID NO: 54:
US-10-054-295-54

Query Match 37.7%; Score 44.5; DB 9; Length 872;
Best Local Similarity 52.6%; Pred. No. 1.1e+02;
Matches 10; Conservative 3; Mismatches 5; Indels 1; Gaps 1;

Qy 1 FVFLQKYPH-THLVHQANP 18
Db 350 FKFLQEFPRLTHVSQQAIP 368

RESULT 51
US-09-925-301-1262
; Sequence 1262, Application US/09925301
; Patent No. US20020052308A1
; GENERAL INFORMATION:
; APPLICANT: Rosen et al.
; TITLE OF INVENTION: Nucleic Acids, Proteins and Antibodies
; FILE REFERENCE: PA106
; CURRENT APPLICATION NUMBER: US/09/925,301
; CURRENT FILING DATE: 2001-08-10
; PRIOR APPLICATION NUMBER: PCT/US00/05882
; PRIOR FILING DATE: 2000-03-08
; PRIOR APPLICATION NUMBER: 60/124,270
; PRIOR FILING DATE: 1999-03-12
; NUMBER OF SEQ ID NOS: 1694
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 1262
; LENGTH: 75
; TYPE: PRT
; ORGANISM: Homo sapiens
US-09-925-301-1262

Query Match 37.3%; Score 44; DB 10; Length 75;
Best Local Similarity 50.0%; Pred. No. 10;
Matches 10; Conservative 3; Mismatches 7; Indels 0; Gaps 0;

Qy 2 VFLQKYPHTHLVHQANPRGS 21
Db 47 VFIEKKLSTHLVFQENLKRS 66

RESULT 52
US-09-924-256A-84
; Sequence 84, Application US/09924256A
; Patent No. US20020127659A1
; GENERAL INFORMATION:
; APPLICANT: Waters, Barbara
; APPLICANT: Miao, Vivian
; APPLICANT: Ho, Yap
; APPLICANT: Tong, Seow
; TITLE OF INVENTION: METHOD FOR ISOLATION OF BIOSYNTHESIS GENES FOR
; TITLE OF INVENTION: BIOACTIVE MOLECULES
; FILE REFERENCE: 9993-006
; CURRENT APPLICATION NUMBER: US/09/924,256A
; CURRENT FILING DATE: 2001-08-08
; PRIOR APPLICATION NUMBER: 08/861,774
; PRIOR FILING DATE: 2001-04-13
; NUMBER OF SEQ ID NOS: 94
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 84
; LENGTH: 396
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence: Clone ps7
US-09-924-256A-84

Query Match 35.6%; Score 42; DB 10; Length 396;
Best Local Similarity 47.4%; Pred. No. 1.1e+02;
Matches 9; Conservative 1; Mismatches 9; Indels 0; Gaps 0;

Qy 3 FLQKYPHTHLVHQANPRGS 21
Db 129 FLDTLPECHLVNQYGPTES 147

RESULT 53
US-10-005-983-2
; Sequence 2, Application US/10005983
; Patent No. US20020116730A1

```
; GENERAL INFORMATION:
;  APPLICANT: Allen, Keith D.
;  TITLE OF INVENTION: TRANSGENIC MICE CONTAINING PERK PROTEIN
;  TITLE OF INVENTION:  KINASE GENE DISRUPTIONS
;  FILE REFERENCE: R-517
;  CURRENT APPLICATION NUMBER: US/10/005,983
;  CURRENT FILING DATE:  2001-11-07
;  PRIOR APPLICATION NUMBER: US 60/246,676
;  PRIOR FILING DATE: 2000-11-07
;  PRIOR APPLICATION NUMBER: US 60/311,018
;  PRIOR FILING DATE: 2001-08-08
;  PRIOR APPLICATION NUMBER: US 60/324,765
;  PRIOR FILING DATE: 2001-09-24
;  PRIOR APPLICATION NUMBER: US 60/326,148
;  PRIOR FILING DATE: 2001-09-28
;  NUMBER OF SEQ ID NOS: 4
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 2
;   LENGTH: 1114
;   TYPE: PRT
;   ORGANISM: Mus musculus
US-10-005-983-2

  Query Match             35.6%;  Score 42;  DB 12;  Length 1114;
  Best Local Similarity   50.0%;  Pred. No. 3.3e+02;
  Matches    7;  Conservative    3;  Mismatches    4;  Indels    0;  Gaps    0;

Qy       2 VFLQKYPHTHLVHQ 15
           :| ||||  |:: |
Db    1040 LFTQKYPQEHMMVQ 1053


RESULT 54
US-09-925-300-1155
; Sequence 1155, Application US/09925300
; Patent No. US20020151681A1
; GENERAL INFORMATION:
;  APPLICANT: Craig Rosen,
;  APPLICANT:  Steve Ruben
;  TITLE OF INVENTION: Nucleic Acids, Proteins and Antibodies
;  FILE REFERENCE: PA101
;  CURRENT APPLICATION NUMBER: US/09/925,300
;  CURRENT FILING DATE:  2001-08-10
;  PRIOR APPLICATION NUMBER: PCT/US00/05988
;  PRIOR FILING DATE: 2000-03-08
;  PRIOR APPLICATION NUMBER: 60/124,270
;  PRIOR FILING DATE: 1999-03-12
;  NUMBER OF SEQ ID NOS: 1890
;  SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 1155
;   LENGTH: 120
;   TYPE: PRT
;   ORGANISM: Homo sapiens
US-09-925-300-1155

  Query Match             35.2%;  Score 41.5;  DB 10;  Length 120;
  Best Local Similarity   45.0%;  Pred. No. 38;
  Matches    9;  Conservative    5;  Mismatches    5;  Indels    1;  Gaps    1;

Qy       3 FLQKYPHTH-LVHQANPRGS 21
           |::| ||:  |:  | |:||
Db      49 FIEKLPHSPCLLFSAMPQGS 68


RESULT 55
US-09-798-889-106
; Sequence 106, Application US/09798889
; Publication No. US20030004324A1
; GENERAL INFORMATION:
;  APPLICANT: Rosen et al.
;  TITLE OF INVENTION: 31 Human secreted proteins
;  FILE REFERENCE: PZ026P1
;  CURRENT APPLICATION NUMBER: US/09/798,889
;  CURRENT FILING DATE:  2001-03-06
;  PRIOR APPLICATION NUMBER: EARLIER APPLICATION NUMBER: 09/393,022
;  PRIOR FILING DATE: EARLIER FILING DATE: 1999-09-09
;  PRIOR APPLICATION NUMBER: EARLIER APPLICATION NUMBER: 60/077,714
;  PRIOR FILING DATE: EARLIER FILING DATE: 1998-03-12
;  PRIOR APPLICATION NUMBER: EARLIER APPLICATION NUMBER: 60/077,686
;  PRIOR FILING DATE: EARLIER FILING DATE: 1998-03-12
;  PRIOR APPLICATION NUMBER: EARLIER APPLICATION NUMBER: 60/077,687
;  PRIOR FILING DATE: EARLIER FILING DATE: 1998-03-12
;  PRIOR APPLICATION NUMBER: EARLIER APPLICATION NUMBER: 60/077,696
;  PRIOR FILING DATE: EARLIER FILING DATE: 1998-03-12
;  NUMBER OF SEQ ID NOS: 185
;  SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 106
;   LENGTH: 53
;   TYPE: PRT
;   ORGANISM: Homo sapiens
;   FEATURE:
;   NAME/KEY: SITE
;   LOCATION: (53)
;   OTHER INFORMATION: Xaa equals any of the naturally occurring L-amino acids
US-09-798-889-106

  Query Match             34.7%;  Score 41;  DB 9;  Length 53;
  Best Local Similarity   53.8%;  Pred. No. 19;
  Matches    7;  Conservative    2;  Mismatches    4;  Indels    0;  Gaps    0;

Qy       4 LQKYPHTHLVHQA 16
           ||:  | ||:| |
Db      17 LQRVEHLHLLHHA 29


RESULT 56
US-09-866-050A-322
; Sequence 322, Application US/09866050A
; Publication No. US20030040471A1
; GENERAL INFORMATION:
;  APPLICANT: Watson, James D.
;  APPLICANT:  Strachan, Lorna
;  APPLICANT:  Sleeman, Matthew
;  APPLICANT:  Onrust, Rene
;  APPLICANT:  Murison, James G.
;  APPLICANT:  Kumble, Krishanand D.
;  TITLE OF INVENTION: Compositions Isolated From Skin Cells
;  TITLE OF INVENTION:  and Methods for Their Use
;  FILE REFERENCE: 11000.1011c4U
;  CURRENT APPLICATION NUMBER: US/09/866,050A
;  CURRENT FILING DATE:  2001-05-24
;  NUMBER OF SEQ ID NOS: 725
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 322
;   LENGTH: 54
;   TYPE: PRT
;   ORGANISM: Mouse
US-09-866-050A-322

  Query Match             34.7%;  Score 41;  DB 9;  Length 54;
  Best Local Similarity   53.8%;  Pred. No. 20;
  Matches    7;  Conservative    3;  Mismatches    3;  Indels    0;  Gaps    0;

Qy       7 YPHTHLVHQANPR 19
           :| || | ||:|:
Db      32 FPGTHSVDQASPK 44


RESULT 57
US-09-864-761-44155
; Sequence 44155, Application US/09864761
; Patent No. US20020048763A1
; GENERAL INFORMATION:
;  APPLICANT: Penn, Sharron G.
;  APPLICANT:  Rank, David R.
;  APPLICANT:  Hanzel, David K.
```

```
;  APPLICANT:  Chen, Wensheng
;  TITLE OF INVENTION: HUMAN GENOME-DERIVED SINGLE EXON NUCLEIC ACID PROBES USEFUL FOR
;  TITLE OF INVENTION:  GENE EXPRESSION ANALYSIS BY MICROARRAY
;  FILE REFERENCE: Aeomica-X-1
;  CURRENT APPLICATION NUMBER: US/09/864,761
;  CURRENT FILING DATE:  2001-05-23
;  PRIOR APPLICATION NUMBER: US 60/180,312
;  PRIOR FILING DATE: 2000-02-04
;  PRIOR APPLICATION NUMBER: US 60/207,456
;  PRIOR FILING DATE: 2000-05-26
;  PRIOR APPLICATION NUMBER: US 09/632,366
;  PRIOR FILING DATE: 2000-08-03
;  PRIOR APPLICATION NUMBER: GB 24263.6
;  PRIOR FILING DATE: 2000-10-04
;  PRIOR APPLICATION NUMBER: US 60/236,359
;  PRIOR FILING DATE: 2000-09-27
;  PRIOR APPLICATION NUMBER: PCT/US01/00666
;  PRIOR FILING DATE: 2001-01-30
;  PRIOR APPLICATION NUMBER: PCT/US01/00667
;  PRIOR FILING DATE: 2001-01-30
;  PRIOR APPLICATION NUMBER: PCT/US01/00664
;  PRIOR FILING DATE: 2001-01-30
;  PRIOR APPLICATION NUMBER: PCT/US01/00669
;  PRIOR FILING DATE: 2001-01-30
;  PRIOR APPLICATION NUMBER: PCT/US01/00665
;  PRIOR FILING DATE: 2001-01-30
;  PRIOR APPLICATION NUMBER: PCT/US01/00668
;  PRIOR FILING DATE: 2001-01-30
;  PRIOR APPLICATION NUMBER: PCT/US01/00663
;  PRIOR FILING DATE: 2001-01-30
;  PRIOR APPLICATION NUMBER: PCT/US01/00662
;  PRIOR FILING DATE: 2001-01-30
;  PRIOR APPLICATION NUMBER: PCT/US01/00661
;  PRIOR FILING DATE: 2001-01-30
;  PRIOR APPLICATION NUMBER: PCT/US01/00670
;  PRIOR FILING DATE: 2001-01-30
;  PRIOR APPLICATION NUMBER: US 60/234,687
;  PRIOR FILING DATE: 2000-09-21
;  PRIOR APPLICATION NUMBER: US 09/608,408
;  PRIOR FILING DATE: 2000-06-30
;  PRIOR APPLICATION NUMBER: US 09/774,203
;  PRIOR FILING DATE: 2001-01-29
;  NUMBER OF SEQ ID NOS: 49117
;  SOFTWARE: Annomax Sequence Listing Engine vers. 1.1
; SEQ ID NO 44155
;   LENGTH: 127
;   TYPE: PRT
;   ORGANISM: Homo sapiens
;   FEATURE:
;   OTHER INFORMATION: MAP TO AC004622.1
;   OTHER INFORMATION: EXPRESSED IN PLACENTA, SIGNAL = 0.72
;   OTHER INFORMATION: EXPRESSED IN ADULT LIVER, SIGNAL = 0.62
;   OTHER INFORMATION: EXPRESSED IN LUNG, SIGNAL = 0.71
;   OTHER INFORMATION: EXPRESSED IN BRAIN, SIGNAL = 0.79
;   OTHER INFORMATION: EXPRESSED IN BONE MARROW, SIGNAL = 1.5
;   OTHER INFORMATION: EST_HUMAN HIT: AW502362.1, EVALUE 5.00e-40
US-09-864-761-44155

  Query Match             34.3%;  Score 40.5;  DB 10;  Length 127;
  Best Local Similarity   40.9%;  Pred. No. 57;
  Matches    9;  Conservative    2;  Mismatches    8;  Indels    3;  Gaps    1;

Qy       3 FLQKYPHTHL---VHQANPRGS 21
           ||  | ||||    : :  |  |
Db      34 FLNSYRHTHLDDPIAEVEPTDS 55


RESULT 58
US-09-864-761-46876
; Sequence 46876, Application US/09864761
; Patent No. US20020048763A1
; GENERAL INFORMATION:
;  APPLICANT: Penn, Sharron G.
;  APPLICANT:  Rank, David R.
;  APPLICANT:  Hanzel, David K.
;  APPLICANT:  Chen, Wensheng
;  TITLE OF INVENTION: HUMAN GENOME-DERIVED SINGLE EXON NUCLEIC ACID PROBES USEFUL FOR
;  TITLE OF INVENTION:  GENE EXPRESSION ANALYSIS BY MICROARRAY
;  FILE REFERENCE: Aeomica-X-1
;  CURRENT APPLICATION NUMBER: US/09/864,761
;  CURRENT FILING DATE:  2001-05-23
;  PRIOR APPLICATION NUMBER: US 60/180,312
;  PRIOR FILING DATE: 2000-02-04
;  PRIOR APPLICATION NUMBER: US 60/207,456
;  PRIOR FILING DATE: 2000-05-26
;  PRIOR APPLICATION NUMBER: US 09/632,366
;  PRIOR FILING DATE: 2000-08-03
;  PRIOR APPLICATION NUMBER: GB 24263.6
;  PRIOR FILING DATE: 2000-10-04
;  PRIOR APPLICATION NUMBER: US 60/236,359
;  PRIOR FILING DATE: 2000-09-27
;  PRIOR APPLICATION NUMBER: PCT/US01/00666
;  PRIOR FILING DATE: 2001-01-30
;  PRIOR APPLICATION NUMBER: PCT/US01/00667
;  PRIOR FILING DATE: 2001-01-30
;  PRIOR APPLICATION NUMBER: PCT/US01/00664
;  PRIOR FILING DATE: 2001-01-30
;  PRIOR APPLICATION NUMBER: PCT/US01/00669
;  PRIOR FILING DATE: 2001-01-30
;  PRIOR APPLICATION NUMBER: PCT/US01/00665
;  PRIOR FILING DATE: 2001-01-30
;  PRIOR APPLICATION NUMBER: PCT/US01/00668
;  PRIOR FILING DATE: 2001-01-30
;  PRIOR APPLICATION NUMBER: PCT/US01/00663
;  PRIOR FILING DATE: 2001-01-30
;  PRIOR APPLICATION NUMBER: PCT/US01/00662
;  PRIOR FILING DATE: 2001-01-30
;  PRIOR APPLICATION NUMBER: PCT/US01/00661
;  PRIOR FILING DATE: 2001-01-30
;  PRIOR APPLICATION NUMBER: PCT/US01/00670
;  PRIOR FILING DATE: 2001-01-30
;  PRIOR APPLICATION NUMBER: US 60/234,687
;  PRIOR FILING DATE: 2000-09-21
;  PRIOR APPLICATION NUMBER: US 09/608,408
;  PRIOR FILING DATE: 2000-06-30
;  PRIOR APPLICATION NUMBER: US 09/774,203
;  PRIOR FILING DATE: 2001-01-29
;  NUMBER OF SEQ ID NOS: 49117
;  SOFTWARE: Annomax Sequence Listing Engine vers. 1.1
; SEQ ID NO 46876
;   LENGTH: 80
;   TYPE: PRT
;   ORGANISM: Homo sapiens
;   FEATURE:
;   OTHER INFORMATION: MAP TO AC009893.1
;   OTHER INFORMATION: EXPRESSED IN ADULT LIVER, SIGNAL = 0.92
;   OTHER INFORMATION: SWISSPROT HIT: O15945, EVALUE 1.40e+00
;   OTHER INFORMATION: EST_HUMAN HIT: BE620789.1, EVALUE 2.20e-01
US-09-864-761-46876

  Query Match             33.9%;  Score 40;  DB 10;  Length 80;
  Best Local Similarity   38.9%;  Pred. No. 41;
  Matches    7;  Conservative    3;  Mismatches    8;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANP 18
           | :   :| |||:|   |
Db      18 FSWAHGFPGTHLLHCGQP 35


RESULT 59
US-09-738-626-3543
; Sequence 3543, Application US/09738626
; Publication No. US20020197605A1
; GENERAL INFORMATION:
;  APPLICANT: NAKAGAWA, SATOSHI
;  APPLICANT:  MIZOGUCHI, HIROSHI
```

```
;  APPLICANT:  ANDO, SEIKO
;  APPLICANT:  HAYASHI, MIKIRO
;  APPLICANT:  OCHIAI, KEIKO
;  APPLICANT:  YOKOI, HARUHIKO
;  APPLICANT:  TATEISHI, NAOKO
;  APPLICANT:  SENOH, AKIHIRO
;  APPLICANT:  IKEDA, MASATO
;  APPLICANT:  OZAKI, AKIO
;  TITLE OF INVENTION: NOVEL POLYNUCLEOTIDES
;  FILE REFERENCE: 249-125
;  CURRENT APPLICATION NUMBER: US/09/738,626
;  CURRENT FILING DATE:  2000-12-18
;  PRIOR APPLICATION NUMBER: JP 99/377484
;  PRIOR FILING DATE: 1999-12-16
;  PRIOR APPLICATION NUMBER: JP 00/159162
;  PRIOR FILING DATE: 2000-04-07
;  PRIOR APPLICATION NUMBER: JP 00/280988
;  PRIOR FILING DATE: 2000-08-03
;  NUMBER OF SEQ ID NOS: 7059
;  SOFTWARE: PatentIn ver. 3.0
; SEQ ID NO 3543
;   LENGTH: 259
;   TYPE: PRT
;   ORGANISM: Corynebacterium glutamicum
US-09-738-626-3543

  Query Match             33.9%;  Score 40;  DB 9;  Length 259;
  Best Local Similarity   60.0%;  Pred. No. 1.4e+02;
  Matches    6;  Conservative    2;  Mismatches    2;  Indels    0;  Gaps    0;

Qy       6 KYPHTHLVHQ 15
           :||| ||: |
Db     100 RYPHQHLLSQ 109


RESULT 60
US-09-738-626-4141
; Sequence 4141, Application US/09738626
; Publication No. US20020197605A1
; GENERAL INFORMATION:
;  APPLICANT: NAKAGAWA, SATOSHI
;  APPLICANT:  MIZOGUCHI, HIROSHI
;  APPLICANT:  ANDO, SEIKO
;  APPLICANT:  HAYASHI, MIKIRO
;  APPLICANT:  OCHIAI, KEIKO
;  APPLICANT:  YOKOI, HARUHIKO
;  APPLICANT:  TATEISHI, NAOKO
;  APPLICANT:  SENOH, AKIHIRO
;  APPLICANT:  IKEDA, MASATO
;  APPLICANT:  OZAKI, AKIO
;  TITLE OF INVENTION: NOVEL POLYNUCLEOTIDES
;  FILE REFERENCE: 249-125
;  CURRENT APPLICATION NUMBER: US/09/738,626
;  CURRENT FILING DATE:  2000-12-18
;  PRIOR APPLICATION NUMBER: JP 99/377484
;  PRIOR FILING DATE: 1999-12-16
;  PRIOR APPLICATION NUMBER: JP 00/159162
;  PRIOR FILING DATE: 2000-04-07
;  PRIOR APPLICATION NUMBER: JP 00/280988
;  PRIOR FILING DATE: 2000-08-03
;  NUMBER OF SEQ ID NOS: 7059
;  SOFTWARE: PatentIn ver. 3.0
; SEQ ID NO 4141
;   LENGTH: 274
;   TYPE: PRT
;   ORGANISM: Corynebacterium glutamicum
US-09-738-626-4141

  Query Match             33.9%;  Score 40;  DB 9;  Length 274;
  Best Local Similarity   60.0%;  Pred. No. 1.5e+02;
  Matches    6;  Conservative    2;  Mismatches    2;  Indels    0;  Gaps    0;

Qy      11 HLVHQANPRG 20
           | :|| ||:|
Db     103 HGIHQQNPKG 112


RESULT 61
US-09-815-242-11316
; Sequence 11316, Application US/09815242
; Patent No. US20020061569A1
; GENERAL INFORMATION:
;  APPLICANT: Haselbeck, Robert
;  APPLICANT:  Ohlsen, Kari L.
;  APPLICANT:  Zyskind, Judith W.
;  APPLICANT:  Wall, Daniel
;  APPLICANT:  Trawick, John D.
;  APPLICANT:  Carr, Grant J.
;  APPLICANT:  Yamamoto, Robert T.
;  APPLICANT:  Xu, H. Howard
;  TITLE OF INVENTION: Identification of Essential Genes in
;  TITLE OF INVENTION:  Prokaryotes
;  FILE REFERENCE: ELITRA.011A
;  CURRENT APPLICATION NUMBER: US/09/815,242
;  CURRENT FILING DATE:  2001-03-21
;  PRIOR APPLICATION NUMBER: 60/191,078
;  PRIOR FILING DATE: 2000-03-21
;  PRIOR APPLICATION NUMBER: 60/206,848
;  PRIOR FILING DATE: 2000-05-23
;  PRIOR APPLICATION NUMBER: 60/207,727
;  PRIOR FILING DATE: 2000-05-26
;  PRIOR APPLICATION NUMBER: 60/242,578
;  PRIOR FILING DATE: 2000-10-23
;  PRIOR APPLICATION NUMBER: 60/253,625
;  PRIOR FILING DATE: 2000-11-27
;  PRIOR APPLICATION NUMBER: 60/257,931
;  PRIOR FILING DATE: 2000-12-22
;  PRIOR APPLICATION NUMBER: 60/269,308
;  PRIOR FILING DATE: 2001-02-16
;  NUMBER OF SEQ ID NOS: 14110
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 11316
;   LENGTH: 541
;   TYPE: PRT
;   ORGANISM: Helicobacter pylori
US-09-815-242-11316

  Query Match             33.9%;  Score 40;  DB 10;  Length 541;
  Best Local Similarity   29.7%;  Pred. No. 3e+02;
  Matches   11;  Conservative    2;  Mismatches    6;  Indels   18;  Gaps    1;

Qy       1 FVFLQKYPHTHL----------------VHQANPR 19
           |:|| |   |||                :| || |
Db     393 FIFLSKRLDTHLEFDVNTLKKQDSSNPIYYIHYANSR 429


RESULT 62
US-10-108-605-249
; Sequence 249, Application US/10108605
; Patent No. US20020160934A1
; GENERAL INFORMATION:
;  APPLICANT: Broadus, Julie
;  APPLICANT:  Stam, Lynn
;  APPLICANT:  Bachmann, Jane
;  APPLICANT:  Kamdar, Kim
;  TITLE OF INVENTION: NUCLEIC ACID SEQUENCES FROM DROSOPHILA MELANOGASTER THAT ENCODE
;  TITLE OF INVENTION:  PROTEINS ESSENTIAL FOR LARVAL VIABILITY AND USES THEREOF
;  FILE REFERENCE: 31133B
;  CURRENT APPLICATION NUMBER: US/10/108,605
;  CURRENT FILING DATE:  2002-03-27
;  PRIOR APPLICATION NUMBER: US 09/761,142
;  PRIOR FILING DATE: 2001-01-16
;  PRIOR APPLICATION NUMBER: US 60/176,418
;  PRIOR FILING DATE: 2000-01-14
;  NUMBER OF SEQ ID NOS: 361
;  SOFTWARE: PatentIn Ver. 2.1
```

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; SEQ ID NO 249
;   LENGTH: 1345
;   TYPE: PRT
;   ORGANISM: Drosophila melanogaster
US-10-108-605-249

  Query Match             33.9%;  Score 40;  DB 9;  Length 1345;
  Best Local Similarity   85.7%;  Pred. No. 7.7e+02;
  Matches    6;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       8 PHTHLVH 14
            ||||| |
Db     397 PHTHLTH 403


RESULT 63
US-09-925-301-1244
; Sequence 1244, Application US/09925301
; Patent No. US20020052308A1
; GENERAL INFORMATION:
;  APPLICANT: Rosen et al.
;  TITLE OF INVENTION: Nucleic Acids, Proteins and Antibodies
;  FILE REFERENCE: PA106
;  CURRENT APPLICATION NUMBER: US/09/925,301
;  CURRENT FILING DATE:  2001-08-10
;  PRIOR APPLICATION NUMBER: PCT/US00/05882
;  PRIOR FILING DATE: 2000-03-08
;  PRIOR APPLICATION NUMBER: 60/124,270
;  PRIOR FILING DATE: 1999-03-12
;  NUMBER OF SEQ ID NOS: 1694
;  SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 1244
;   LENGTH: 222
;   TYPE: PRT
;   ORGANISM: Homo sapiens
;   FEATURE:
;   NAME/KEY: SITE
;   LOCATION: (17)
;   OTHER INFORMATION: Xaa equals any of the naturally occurring L-amino acids
;   NAME/KEY: SITE
;   LOCATION: (72)
;   OTHER INFORMATION: Xaa equals any of the naturally occurring L-amino acids
US-09-925-301-1244

  Query Match             33.1%;  Score 39;  DB 10;  Length 222;
  Best Local Similarity   70.0%;  Pred. No. 1.7e+02;
  Matches    7;  Conservative    0;  Mismatches    3;  Indels    0;  Gaps    0;

Qy       9 HTHLVHQANP 18
            | || ||| |
Db     198 HRHLYHQAFP 207


RESULT 64
US-10-001-851-12
; Sequence 12, Application US/10001851
; Patent No. US20020115628A1
; GENERAL INFORMATION:
;  APPLICANT: MEYERS, Rachel A.
;  APPLICANT:  WILLIAMSON, Mark
;  TITLE OF INVENTION: 47169 and 33935, No. US20020115628A1el Human Glycosyl Transferase
;  TITLE OF INVENTION:  Uses Thereof
;  FILE REFERENCE: 10147-56U1
;  CURRENT APPLICATION NUMBER: US/10/001,851
;  CURRENT FILING DATE:  2001-11-20
;  PRIOR APPLICATION NUMBER: US 60/249,939
;  PRIOR FILING DATE: 2000-11-20
;  NUMBER OF SEQ ID NOS: 29
;  SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 12
;   LENGTH: 492
;   TYPE: PRT
;   ORGANISM: Homo sapiens
US-10-001-851-12

  Query Match             33.1%;  Score 39;  DB 12;  Length 492;
  Best Local Similarity   41.7%;  Pred. No. 3.8e+02;
  Matches   10;  Conservative    3;  Mismatches    3;  Indels    8;  Gaps    1;

Qy       1 FVFLQK--------YPHTHLVHQA 16
             ||||:|        ||| |: |:
Db     130 FVFLRKRYLVEDSLYPHFTLLGQS 153


RESULT 65
US-09-925-300-1053
; Sequence 1053, Application US/09925300
; Patent No. US20020151681A1
; GENERAL INFORMATION:
;  APPLICANT: Craig Rosen,
;  APPLICANT:  Steve Ruben
;  TITLE OF INVENTION: Nucleic Acids, Proteins and Antibodies
;  FILE REFERENCE: PA101
;  CURRENT APPLICATION NUMBER: US/09/925,300
;  CURRENT FILING DATE:  2001-08-10
;  PRIOR APPLICATION NUMBER: PCT/US00/05988
;  PRIOR FILING DATE: 2000-03-08
;  PRIOR APPLICATION NUMBER: 60/124,270
;  PRIOR FILING DATE: 1999-03-12
;  NUMBER OF SEQ ID NOS: 1890
;  SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 1053
;   LENGTH: 724
;   TYPE: PRT
;   ORGANISM: Homo sapiens
;   FEATURE:
;   NAME/KEY: SITE
;   LOCATION: (87)
;   OTHER INFORMATION: Xaa equals any of the naturally occurring L-amino acids
;   NAME/KEY: SITE
;   LOCATION: (680)
;   OTHER INFORMATION: Xaa equals any of the naturally occurring L-amino acids
US-09-925-300-1053

  Query Match             33.1%;  Score 39;  DB 10;  Length 724;
  Best Local Similarity   38.9%;  Pred. No. 5.7e+02;
  Matches    7;  Conservative    3;  Mismatches    8;  Indels    0;  Gaps    0;

Qy       2 VFLQKYPHTHLVHQANPR 19
             :|  :|| : | ||   |
Db     265 IFFDRYPDSILEHQIQVR 282


RESULT 66
US-10-118-984-43
; Sequence 43, Application US/10118984
; Publication No. US20020197693A1
; GENERAL INFORMATION:
;  APPLICANT: Bertin, John
;  TITLE OF INVENTION: NOVEL MOLECULES OF THE CARD-RELATED PROTEIN FAMILY
;  TITLE OF INVENTION:  AND USES THEREOF
;  FILE REFERENCE: 07334/118001
;  CURRENT APPLICATION NUMBER: US/10/118,984
;  CURRENT FILING DATE:  2002-04-09
;  PRIOR APPLICATION NUMBER: EARLIER APPLICATION NUMBER:  US/09/245,281
;  PRIOR FILING DATE: EARLIER FILING DATE: 1999-02-05
;  PRIOR APPLICATION NUMBER: EARLIER APPLICATION NUMBER: US 09/207,359
;  PRIOR FILING DATE: EARLIER FILING DATE: 1998-12-08
;  PRIOR APPLICATION NUMBER: EARLIER APPLICATION NUMBER: US 09/099,041
;  PRIOR FILING DATE: EARLIER FILING DATE: 1998-06-17
;  PRIOR APPLICATION NUMBER: EARLIER APPLICATION NUMBER: US 09/019,942
;  PRIOR FILING DATE: EARLIER FILING DATE: 1998-02-06
;  NUMBER OF SEQ ID NOS: 44
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 43
;   LENGTH: 953
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```
;   TYPE: PRT
;   ORGANISM: Homo sapiens
US-10-118-984-43

  Query Match             33.1%;  Score 39;  DB 9;  Length 953;
  Best Local Similarity   58.3%;  Pred. No. 7.6e+02;
  Matches    7;  Conservative    2;  Mismatches    3;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHL 12
           | || ::||| |
Db     269 FSFLLRFPHTAL 280


RESULT 67
US-09-728-721-43
; Sequence 43, Application US/09728721
; Patent No. US20020061845A1
; GENERAL INFORMATION:
;  APPLICANT: Bertin, John
;  TITLE OF INVENTION: NOVEL MOLECULES OF THE CARD-RELATED PROTEIN FAMILY AND USES THERE
;  FILE REFERENCE: 07334-124001
;  CURRENT APPLICATION NUMBER: US/09/728,721
;  CURRENT FILING DATE:  2000-12-01
;  PRIOR APPLICATION NUMBER: 09/340,620
;  PRIOR FILING DATE: 1999-06-28
;  PRIOR APPLICATION NUMBER: US 09/207,359
;  PRIOR FILING DATE: 1998-12-08
;  PRIOR APPLICATION NUMBER: US 09/099,041
;  PRIOR FILING DATE: 1998-06-17
;  PRIOR APPLICATION NUMBER: US 09/019,942
;  PRIOR FILING DATE: 1998-02-06
;  NUMBER OF SEQ ID NOS: 71
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 43
;   LENGTH: 953
;   TYPE: PRT
;   ORGANISM: Mus musculus
US-09-728-721-43

  Query Match             33.1%;  Score 39;  DB 10;  Length 953;
  Best Local Similarity   58.3%;  Pred. No. 7.6e+02;
  Matches    7;  Conservative    2;  Mismatches    3;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHL 12
           | || ::||| |
Db     269 FSFLLRFPHTAL 280


RESULT 68
US-10-004-551-12
; Sequence 12, Application US/10004551
; Publication No. US20030004310A1
; GENERAL INFORMATION:
;  APPLICANT: SHIMKETS, RICHARD A
;  APPLICANT:  FERNANDES, ELMA
;  TITLE OF INVENTION: POLYNUCLEOTIDES AND POLYPEPTIDES ENCODED THEREBY
;  FILE REFERENCE: 15966-559
;  CURRENT APPLICATION NUMBER: US/10/004,551
;  CURRENT FILING DATE:  2001-12-05
;  PRIOR APPLICATION NUMBER: 09/635,949
;  PRIOR FILING DATE: 2000-08-10
;  NUMBER OF SEQ ID NOS: 110
;  SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 12
;   LENGTH: 121
;   TYPE: PRT
;   ORGANISM: Homo sapiens
US-10-004-551-12

  Query Match             32.6%;  Score 38.5;  DB 9;  Length 121;
  Best Local Similarity   61.5%;  Pred. No. 1.1e+02;
  Matches    8;  Conservative    0;  Mismatches    4;  Indels    1;  Gaps    1;

Qy       8 PHTH-LVHQANPR 19
           |||| | |   ||
Db      38 PHTHTLFHPQRPR 50


RESULT 69
US-09-801-368-326
; Sequence 326, Application US/09801368
; Patent No. US20020128250A1
; GENERAL INFORMATION:
;  APPLICANT: Busby, Robert
;  APPLICANT:  Cali, Brian
;  APPLICANT:  Hecht, Peter
;  APPLICANT:  Holtzman, Doug
;  APPLICANT:  Madden, Kevin
;  APPLICANT:  Maxon, Mary
;  APPLICANT:  Milne, Todd
;  APPLICANT:  No. US20020128250Alman, Thea
;  APPLICANT:  Royer, John
;  APPLICANT:  Salama, Sofie
;  APPLICANT:  Sherman, Amir
;  APPLICANT:  Silva, Jeff
;  APPLICANT:  Summers, Eric
;  TITLE OF INVENTION: Methods for Improving Secondary Metabolite Production in Fungi
;  FILE REFERENCE: 109272.147
;  CURRENT APPLICATION NUMBER: US/09/801,368
;  CURRENT FILING DATE:  2001-03-07
;  PRIOR APPLICATION NUMBER: US 09/487,558
;  PRIOR FILING DATE: 2000-01-19
;  PRIOR APPLICATION NUMBER: US 60/160,587
;  PRIOR FILING DATE: 1999-10-20
;  NUMBER OF SEQ ID NOS: 440
;  SOFTWARE: PatentIn version 3.0
; SEQ ID NO 326
;   LENGTH: 771
;   TYPE: PRT
;   ORGANISM: Saccharomyces cerevisiae
US-09-801-368-326

  Query Match             32.6%;  Score 38.5;  DB 10;  Length 771;
  Best Local Similarity   60.0%;  Pred. No. 7.2e+02;
  Matches    9;  Conservative    0;  Mismatches    5;  Indels    1;  Gaps    1;

Qy       7 YPHTHLVHQANPRGS 21
           | | | || ||  ||
Db     320 YHHEH-VHAANSAGS 333


RESULT 70
US-09-826-752-6
; Sequence 6, Application US/09826752
; Patent No. US20010026930A1
; GENERAL INFORMATION:
;  APPLICANT: Guarente, Leonard P.
;  APPLICANT:  Austriaco Jr., Nicanor
;  APPLICANT:  Claus, James J.
;  APPLICANT:  Cole, Francesca
;  APPLICANT:  Kennedy, Brian
;  TITLE OF INVENTION: GENES DETERMINING CELLULAR SENESCENCE IN
;  TITLE OF INVENTION:  YEAST
;  FILE REFERENCE: 0050.1491-005
;  CURRENT APPLICATION NUMBER: US/09/826,752
;  CURRENT FILING DATE:  2001-04-05
;  PRIOR APPLICATION NUMBER: US 08/396,001
;  PRIOR FILING DATE: 1995-02-28
;  PRIOR APPLICATION NUMBER: PCT/US94/09351
;  PRIOR FILING DATE: 1994-08-15
;  PRIOR APPLICATION NUMBER: US 08/107,408
;  PRIOR FILING DATE: 1993-08-16
;  PRIOR APPLICATION NUMBER: US 09/323,433
;  PRIOR FILING DATE: 1999-06-01
;  NUMBER OF SEQ ID NOS: 48
;  SOFTWARE: FastSEQ for Windows Version 4.0
```

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; SEQ ID NO 6
;   LENGTH: 888
;   TYPE: PRT
;   ORGANISM: Saccharomyces cerevisiae
US-09-826-752-6

  Query Match             32.6%;  Score 38.5;  DB 10;  Length 888;
  Best Local Similarity   53.3%;  Pred. No. 8.3e+02;
  Matches    8;  Conservative    2;  Mismatches    4;  Indels    1;  Gaps    1;

Qy       6 KYPHTH-LVHQANPR 19
           || :|| :||   ||
Db     774 KYDYTHKIVHLLKPR 788


RESULT 71
US-10-108-605-211
; Sequence 211, Application US/10108605
; Patent No. US20020160934A1
; GENERAL INFORMATION:
;  APPLICANT: Broadus, Julie
;  APPLICANT:  Stam, Lynn
;  APPLICANT:  Bachmann, Jane
;  APPLICANT:  Kamdar, Kim
;  TITLE OF INVENTION: NUCLEIC ACID SEQUENCES FROM DROSOPHILA MELANOGASTER THAT ENCODE
;  TITLE OF INVENTION:  PROTEINS ESSENTIAL FOR LARVAL VIABILITY AND USES THEREOF
;  FILE REFERENCE: 31133B
;  CURRENT APPLICATION NUMBER: US/10/108,605
;  CURRENT FILING DATE:  2002-03-27
;  PRIOR APPLICATION NUMBER: US 09/761,142
;  PRIOR FILING DATE: 2001-01-16
;  PRIOR APPLICATION NUMBER: US 60/176,418
;  PRIOR FILING DATE: 2000-01-14
;  NUMBER OF SEQ ID NOS: 361
;  SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 211
;   LENGTH: 1237
;   TYPE: PRT
;   ORGANISM: Drosophila melanogaster
US-10-108-605-211

  Query Match             32.6%;  Score 38.5;  DB 9;  Length 1237;
  Best Local Similarity   42.1%;  Pred. No. 1.2e+03;
  Matches    8;  Conservative    4;  Mismatches    2;  Indels    5;  Gaps    1;

Qy       4 LQKYPHTHLVH-----QAN 17
           || :|| |:::     |||
Db     174 LQHHPHPHVMYPHGYQQAN 192


RESULT 72
US-10-002-974-26
; Sequence 26, Application US/10002974
; Publication No. US20020197616A1
; GENERAL INFORMATION:
;  APPLICANT: Nunez, Gabriel
;  APPLICANT:  Inohara, Naohiro
;  APPLICANT:  Ogur, Yasunori
;  APPLICANT:  Cho, Judy
;  APPLICANT:  Nicolae, Dan L
;  APPLICANT:  Bonen, Denise
;  TITLE OF INVENTION: NOD2 Nucleic Acids and Proteins
;  FILE REFERENCE: UM-06646
;  CURRENT APPLICATION NUMBER: US/10/002,974
;  CURRENT FILING DATE:  2001-10-26
;  NUMBER OF SEQ ID NOS: 99
;  SOFTWARE: PatentIn version 3.1
; SEQ ID NO 26
;   LENGTH: 90
;   TYPE: PRT
;   ORGANISM: Homo sapiens
US-10-002-974-26

  Query Match             32.2%;  Score 38;  DB 9;  Length 90;
  Best Local Similarity   54.5%;  Pred. No. 92;
  Matches    6;  Conservative    1;  Mismatches    4;  Indels    0;  Gaps    0;

Qy       9 HTHLVHQANPR 19
           || |:|   ||
Db      13 HTRLIHDFEPR 23


RESULT 73
US-10-014-269-26
; Sequence 26, Application US/10014269
; Patent No. US20020127673A1
; GENERAL INFORMATION:
;  APPLICANT: Nunez, Gabriel
;  APPLICANT:  Inohara, Naohiro
;  APPLICANT:  Ogur, Yasunori
;  TITLE OF INVENTION: NOD2 Nucleic Acids and Proteins
;  FILE REFERENCE: UM-06645
;  CURRENT APPLICATION NUMBER: US/10/014,269
;  CURRENT FILING DATE:  2001-10-26
;  NUMBER OF SEQ ID NOS: 52
;  SOFTWARE: PatentIn version 3.1
; SEQ ID NO 26
;   LENGTH: 90
;   TYPE: PRT
;   ORGANISM: Homo sapiens
US-10-014-269-26

  Query Match             32.2%;  Score 38;  DB 12;  Length 90;
  Best Local Similarity   54.5%;  Pred. No. 92;
  Matches    6;  Conservative    1;  Mismatches    4;  Indels    0;  Gaps    0;

Qy       9 HTHLVHQANPR 19
           || |:|   ||
Db      13 HTRLIHDFEPR 23


RESULT 74
US-09-947-316-5
; Sequence 5, Application US/09947316
; Patent No. US20020103339A1
; GENERAL INFORMATION:
;  APPLICANT: Jennifer L. Hillman
;  APPLICANT:  Preeti Lal
;  APPLICANT:  Neil C. Corley
;  APPLICANT:  Karl J. Guegler
;  APPLICANT:  Chandra Patterson
;  TITLE OF INVENTION: INTERFERON-RESPONSIVE PROTEIN
;  FILE REFERENCE: PF-0459-1 CIP
;  CURRENT APPLICATION NUMBER: US/09/947,316
;  CURRENT FILING DATE:  2001-09-05
;  PRIOR APPLICATION NUMBER: PRIOR  APPLICATION NUMBER: US/09/157,091
;  PRIOR FILING DATE: 1998-09-18
;  NUMBER OF SEQ ID NOS: 5
;  SOFTWARE: PERL Program
; SEQ ID NO 5
;   LENGTH: 191
;   TYPE: PRT
;   ORGANISM: Homo sapiens
;   FEATURE: -
;   OTHER INFORMATION: g33969
US-09-947-316-5

  Query Match             32.2%;  Score 38;  DB 10;  Length 191;
  Best Local Similarity   46.2%;  Pred. No. 2e+02;
  Matches    6;  Conservative    4;  Mismatches    3;  Indels    0;  Gaps    0;

Qy       5 QKYPHTHLVHQAN 17
           |||| ||: :::
Db      72 QKYPMVHLLQKSD 84
```

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RESULT 75
US-09-764-868-1056
; Sequence 1056, Application US/09764868
; Patent No. US20020168711A1
; GENERAL INFORMATION:
;  APPLICANT: Rosen et al.
;  TITLE OF INVENTION: Nucleic Acids, Proteins, and Antibodies
;  FILE REFERENCE: PTZ32
;  CURRENT APPLICATION NUMBER: US/09/764,868
;  CURRENT FILING DATE:  2001-01-17
;  Prior application data removed - refer to PALM or file wrapper
;  NUMBER OF SEQ ID NOS: 1510
;  SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 1056
;   LENGTH: 213
;   TYPE: PRT
;   ORGANISM: Homo sapiens
;   FEATURE:
;   NAME/KEY: SITE
;   LOCATION: (2)
;   OTHER INFORMATION: Xaa equals any of the naturally occurring L-amino acids
;   NAME/KEY: SITE
;   LOCATION: (9)
;   OTHER INFORMATION: Xaa equals any of the naturally occurring L-amino acids
;   NAME/KEY: SITE
;   LOCATION: (17)
;   OTHER INFORMATION: Xaa equals any of the naturally occurring L-amino acids
;   NAME/KEY: SITE
;   LOCATION: (79)
;   OTHER INFORMATION: Xaa equals any of the naturally occurring L-amino acids
;   NAME/KEY: SITE
;   LOCATION: (80)
;   OTHER INFORMATION: Xaa equals any of the naturally occurring L-amino acids
;   NAME/KEY: SITE
;   LOCATION: (86)
;   OTHER INFORMATION: Xaa equals any of the naturally occurring L-amino acids
US-09-764-868-1056

  Query Match             32.2%;  Score 38;  DB 9;  Length 213;
  Best Local Similarity   63.6%;  Pred. No. 2.2e+02;
  Matches    7;  Conservative    1;  Mismatches    3;  Indels    0;  Gaps    0;

Qy       4 LQKYPHTHLVH 14
            ||   | :||||
Db     152 LQPLPSSHLVH 162


Search completed: March 24, 2003, 17:47:15
Job time : 17 secs
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GenCore version 5.1.4_p5_4578

OM protein - protein search, using sw model

Run on: March 24, 2003, 17:46:11 ; Search time 15 Seconds
(without alignments)
41.192 Million cell updates/sec

Title: US-09-620-586B-12_COPY_49_69
Perfect score: 118
Sequence: 1 FVFLQKYPHTHLVHQANPRGS 21

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 262574 seqs, 29422922 residues

Total number of hits satisfying chosen parameters: 262574

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 100 summaries

Database : Issued_Patents_AA:*
1: /cgn2_6/ptodata/2/iaa/5A_COMB.pep:*
2: /cgn2_6/ptodata/2/iaa/5B_COMB.pep:*
3: /cgn2_6/ptodata/2/iaa/6A_COMB.pep:*
4: /cgn2_6/ptodata/2/iaa/6B_COMB.pep:*
5: /cgn2_6/ptodata/2/iaa/PCTUS_COMB.pep:*
6: /cgn2_6/ptodata/2/iaa/backfiles1.pep:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	118	100.0	108	2	US-08-525-596B-8	Sequence 8, Appli
2	118	100.0	108	3	US-09-177-860A-8	Sequence 8, Appli
3	118	100.0	108	4	US-09-378-238-8	Sequence 8, Appli
4	118	100.0	108	4	US-09-451-501-8	Sequence 8, Appli
5	118	100.0	126	2	US-08-525-596B-6	Sequence 6, Appli
6	118	100.0	126	3	US-09-177-860A-6	Sequence 6, Appli
7	118	100.0	126	4	US-09-378-238-6	Sequence 6, Appli
8	118	100.0	126	4	US-09-451-501-6	Sequence 6, Appli
9	118	100.0	130	4	US-09-378-238-21	Sequence 21, Appl
10	118	100.0	225	4	US-09-378-238-19	Sequence 19, Appl
11	118	100.0	375	2	US-08-525-596B-14	Sequence 14, Appl
12	118	100.0	375	2	US-08-765-875-5	Sequence 5, Appli
13	118	100.0	375	3	US-08-795-671-5	Sequence 5, Appli
14	118	100.0	375	3	US-09-177-860A-14	Sequence 14, Appl
15	118	100.0	375	3	US-08-891-789B-2	Sequence 2, Appli
16	118	100.0	375	4	US-09-252-149B-2	Sequence 2, Appli
17	118	100.0	375	4	US-09-252-149B-29	Sequence 29, Appl
18	118	100.0	375	4	US-09-252-149B-30	Sequence 30, Appl
19	118	100.0	375	4	US-09-252-149B-31	Sequence 31, Appl
20	118	100.0	375	4	US-09-252-149B-32	Sequence 32, Appl
21	118	100.0	375	4	US-09-252-149B-34	Sequence 34, Appl
22	118	100.0	375	4	US-09-252-149B-35	Sequence 35, Appl
23	118	100.0	375	4	US-09-378-238-14	Sequence 14, Appl
24	118	100.0	375	4	US-09-451-501-14	Sequence 14, Appl
25	118	100.0	375	4	US-09-451-501-19	Sequence 19, Appl
26	118	100.0	375	4	US-09-451-501-21	Sequence 21, Appl
27	118	100.0	375	4	US-09-451-501-23	Sequence 23, Appl
28	118	100.0	375	4	US-09-451-501-27	Sequence 27, Appl
29	118	100.0	376	2	US-08-525-596B-12	Sequence 12, Appl
30	118	100.0	376	3	US-09-177-860A-12	Sequence 12, Appl
31	118	100.0	376	3	US-08-891-789B-6	Sequence 6, Appli
32	118	100.0	376	4	US-09-252-149B-27	Sequence 27, Appl
33	118	100.0	376	4	US-09-252-149B-28	Sequence 28, Appl
34	118	100.0	376	4	US-09-378-238-12	Sequence 12, Appl
35	118	100.0	376	4	US-09-451-501-12	Sequence 12, Appl
36	118	100.0	376	4	US-09-451-501-25	Sequence 25, Appl
37	112	94.9	375	4	US-09-252-149B-33	Sequence 33, Appl
38	110	93.2	24	4	US-09-252-149B-12	Sequence 12, Appl
39	110	93.2	124	4	US-09-252-149B-24	Sequence 24, Appl
40	102	86.4	126	1	US-08-247-907A-2	Sequence 2, Appli
41	102	86.4	126	1	US-08-452-772-2	Sequence 2, Appli
42	102	86.4	126	2	US-08-765-875-4	Sequence 4, Appli
43	102	86.4	126	3	US-08-795-671-4	Sequence 4, Appli
44	102	86.4	126	4	US-09-414-234-2	Sequence 2, Appli
45	102	86.4	126	4	US-08-919-850-2	Sequence 2, Appli
46	102	86.4	126	5	PCT-US94-05288-2	Sequence 2, Appli
47	102	86.4	362	1	US-08-247-907A-11	Sequence 11, Appl
48	102	86.4	362	1	US-08-452-772-11	Sequence 11, Appl
49	102	86.4	362	4	US-09-414-234-11	Sequence 11, Appl
50	102	86.4	362	4	US-08-919-850-11	Sequence 11, Appl
51	102	86.4	362	5	PCT-US94-05288-11	Sequence 11, Appl
52	102	86.4	407	2	US-08-765-875-2	Sequence 2, Appli
53	102	86.4	407	2	US-08-765-875-6	Sequence 6, Appli
54	102	86.4	407	3	US-08-795-671-2	Sequence 2, Appli
55	102	86.4	407	3	US-08-795-671-6	Sequence 6, Appli
56	99	83.9	52	1	US-08-247-907A-4	Sequence 4, Appli
57	99	83.9	52	1	US-08-452-772-4	Sequence 4, Appli
58	99	83.9	52	4	US-09-414-234-4	Sequence 4, Appli
59	99	83.9	52	4	US-08-919-850-4	Sequence 4, Appli
60	99	83.9	52	5	PCT-US94-05288-4	Sequence 4, Appli
61	91	77.1	136	4	US-09-378-238-33	Sequence 33, Appl
62	91	77.1	157	4	US-09-378-238-31	Sequence 31, Appl
63	90	76.3	374	4	US-09-252-149B-36	Sequence 36, Appl
64	90	76.3	374	4	US-09-378-238-29	Sequence 29, Appl
65	49	41.5	358	4	US-09-134-001C-5633	Sequence 5633, Ap
66	48.5	41.1	229	1	US-08-158-682A-2	Sequence 2, Appli
67	48.5	41.1	229	1	US-08-015-203-2	Sequence 2, Appli
68	48.5	41.1	229	1	US-08-687-895-5	Sequence 5, Appli
69	48.5	41.1	229	1	US-08-816-241-5	Sequence 5, Appli
70	48.5	41.1	229	2	US-09-040-482-5	Sequence 5, Appli
71	48.5	41.1	229	3	US-09-128-395-5	Sequence 5, Appli
72	46	39.0	989	4	US-09-199-637A-273	Sequence 273, App
73	45	38.1	289	2	US-08-484-905-79	Sequence 79, Appl
74	45	38.1	289	3	US-08-481-985B-79	Sequence 79, Appl
75	45	38.1	289	4	US-08-370-476-79	Sequence 79, Appl
76	44.5	37.7	840	4	US-08-974-549A-190	Sequence 190, App
77	44.5	37.7	872	3	US-08-851-843A-8	Sequence 8, Appli
78	44.5	37.7	872	3	US-08-851-843A-54	Sequence 54, Appl
79	44.5	37.7	872	4	US-08-974-549A-221	Sequence 221, App
80	44.5	37.7	872	4	US-08-854-050-8	Sequence 8, Appli
81	44.5	37.7	872	4	US-08-854-050-54	Sequence 54, Appl
82	44.5	37.7	872	4	US-09-430-323-8	Sequence 8, Appli
83	44.5	37.7	872	4	US-09-430-323-54	Sequence 54, Appl
84	42	35.6	301	1	US-07-920-519-1	Sequence 1, Appli
85	42	35.6	301	1	US-08-314-586-1	Sequence 1, Appli
86	42	35.6	302	1	US-07-920-519-2	Sequence 2, Appli
87	42	35.6	302	1	US-08-086-410-37	Sequence 37, Appl
88	42	35.6	302	1	US-08-314-586-2	Sequence 2, Appli
89	42	35.6	302	1	US-08-314-586-40	Sequence 40, Appl
90	42	35.6	302	4	US-09-347-878-58	Sequence 58, Appl
91	42	35.6	396	4	US-08-861-774E-84	Sequence 84, Appl
92	41	34.7	54	4	US-09-188-930-322	Sequence 322, App
93	40.5	34.3	292	1	US-07-952-817-25	Sequence 25, Appl
94	40	33.9	64	4	US-09-134-001C-3537	Sequence 3537, Ap
95	40	33.9	108	2	US-08-484-905-82	Sequence 82, Appl
96	40	33.9	108	3	US-08-481-985B-82	Sequence 82, Appl
97	40	33.9	108	4	US-08-370-476-82	Sequence 82, Appl
98	40	33.9	290	2	US-08-484-905-80	Sequence 80, Appl
99	40	33.9	290	3	US-08-481-985B-80	Sequence 80, Appl
100	40	33.9	290	4	US-08-370-476-80	Sequence 80, Appl

ALIGNMENTS

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RESULT 1
US-08-525-596B-8
; Sequence 8, Application US/08525596B
; Patent No. 5827733
;  GENERAL INFORMATION:
;    APPLICANT:  Huynh, Thanh
;    APPLICANT:  Lee, Se-Jin
;    TITLE OF INVENTION:  GROWTH DIFFERENTIATION FACTOR-8
;    NUMBER OF SEQUENCES:  32
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Fish & Richardson P.C.
;      STREET:  4225 Executive Square, Suite 1400
;      CITY:  La Jolla
;      STATE:  CA
;      COUNTRY:  US
;      ZIP:  92037
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Diskette
;      COMPUTER:  IBM Compatible
;      OPERATING SYSTEM:  Windows95
;      SOFTWARE:  FastSEQ for Windows Version 2.0
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/525,596B
;      FILING DATE:  19-SEP-1995
;      CLASSIFICATION:  514
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  PCT/US94/07762
;      FILING DATE:  08-JUL-1994
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Wetherell, Jr., Ph.D, John R.
;      REGISTRATION NUMBER:  31,678
;      REFERENCE/DOCKET NUMBER:  07265/075001
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  619-678-5070
;      TELEFAX:  619-678-5099
;  INFORMATION FOR SEQ ID NO:  8:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  108 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
;    FRAGMENT TYPE:  internal
US-08-525-596B-8

  Query Match             100.0%;  Score 118;  DB 2;  Length 108;
  Best Local Similarity   100.0%;  Pred. No. 2.3e-11;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
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Db      54 FVFLQKYPHTHLVHQANPRGS 74


RESULT 2
US-09-177-860A-8
; Sequence 8, Application US/09177860A
; Patent No. 6096506
;  GENERAL INFORMATION:
;    APPLICANT:  Huynh, Thanh
;    APPLICANT:  Lee, Se-Jin
;    TITLE OF INVENTION:  ANTIBODIES SPECIFIC FOR GROWTH DIFFERENTIATION FACTOR-8 AN
;    NUMBER OF SEQUENCES:  32
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Gray Cary Ware & Freidenrich LLP
;      STREET:  4365 Executive Drive, Suite 1600
;      CITY:  San Diego
;      STATE:  CA
;      COUNTRY:  US
;      ZIP:  92121
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Diskette
;      COMPUTER:  IBM Compatible
;      OPERATING SYSTEM:  Windows95
;      SOFTWARE:  FastSEQ for Windows Version 2.0
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/09/177,860A
;      FILING DATE:  23-OCT-1998
;      CLASSIFICATION:  424
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  08/525,596
;      FILING DATE:  19-SEP-1995
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Haile, Ph.D, Lisa A.
;      REGISTRATION NUMBER:  38,347
;      REFERENCE/DOCKET NUMBER:  07265/075003
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  858-677-1456
;      TELEFAX:  858-677-1465
;  INFORMATION FOR SEQ ID NO:  8:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  108 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
;    FRAGMENT TYPE:  internal
US-09-177-860A-8

  Query Match             100.0%;  Score 118;  DB 3;  Length 108;
  Best Local Similarity   100.0%;  Pred. No. 2.3e-11;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db      54 FVFLQKYPHTHLVHQANPRGS 74


RESULT 3
US-09-378-238-8
; Sequence 8, Application US/09378238
; Patent No. 6465239
; GENERAL INFORMATION:
;  APPLICANT: Lee, Se-Jin
;  APPLICANT: McPherron, Alexandra C.
;  TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR-8 NUCLEIC
;  TITLE OF INVENTION: ACID AND POLYPEPTIDES FROM AQUATIC SPECIES AND NON-HUMAN
;  TITLE OF INVENTION: TRANSGENIC AQUATIC SPECIES
;  FILE REFERENCE: JHU1120-9
;  CURRENT APPLICATION NUMBER: US/09/378,238
;  CURRENT FILING DATE: 1999-08-19
;  EARLIER APPLICATION NUMBER: 08/795,071
;  EARLIER FILING DATE: 1997-02-05
;  EARLIER APPLICATION NUMBER: 08/525,596
;  EARLIER FILING DATE: 1995-10-25
;  EARLIER APPLICATION NUMBER: PCT/US94/03019
;  EARLIER FILING DATE: 1994-03-18
;  EARLIER APPLICATION NUMBER: 08/033,923
;  EARLIER FILING DATE: 1993-03-19
;  NUMBER OF SEQ ID NOS: 41
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 8
;   LENGTH: 108
;   TYPE: PRT
;   ORGANISM: Homo sapiens
US-09-378-238-8

  Query Match             100.0%;  Score 118;  DB 4;  Length 108;
  Best Local Similarity   100.0%;  Pred. No. 2.3e-11;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
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Db      54 FVFLQKYPHTHLVHQANPRGS 74


RESULT 4
US-09-451-501-8
; Sequence 8, Application US/09451501
; Patent No. 6468535
;   GENERAL INFORMATION:
;        APPLICANT: Se-Jin Lee et al.,
;        TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR-8
;        NUMBER OF SEQUENCES: 27
;        CORRESPONDENCE ADDRESS:
;             ADDRESSEE: Fish & Richardson P.C.
;             STREET: 4225 Executive Square, Suite 1400
;             CITY: La Jolla
;             STATE: CA
;             COUNTRY: US
;             ZIP: 92037
;        COMPUTER READABLE FORM:
;             MEDIUM TYPE: Diskette
;             COMPUTER: IBM Compatible
;             OPERATING SYSTEM: Windows95
;             SOFTWARE: FastSEQ for Windows Version 2.0
;        CURRENT APPLICATION DATA:
;             APPLICATION NUMBER: US/09/451,501
;             FILING DATE: 30-No. 6468535-1999
;             CLASSIFICATION: <Unknown>
;        PRIOR APPLICATION DATA:
;             APPLICATION NUMBER: 08/795,071
;             FILING DATE: <Unknown>
;             APPLICATION NUMBER: PCT/US94/03019
;             FILING DATE: 18-March-1994
;        ATTORNEY/AGENT INFORMATION:
;             NAME: Lisa A. Haile, Ph.D.
;             REGISTRATION NUMBER: 38,347
;             REFERENCE/DOCKET NUMBER: 07265/105001
;        TELECOMMUNICATION INFORMATION:
;             TELEPHONE: 619/678-5070
;             TELEFAX: 619/678-5099
;   INFORMATION FOR SEQ ID NO: 8:
;        SEQUENCE CHARACTERISTICS:
;             LENGTH: 108 amino acids
;             TYPE: amino acid
;             TOPOLOGY: linear
;        MOLECULE TYPE: protein
;        FRAGMENT TYPE: internal
;        SEQUENCE DESCRIPTION: SEQ ID NO: 8:
US-09-451-501-8

  Query Match             100.0%;  Score 118;  DB 4;  Length 108;
  Best Local Similarity   100.0%;  Pred. No. 2.3e-11;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db      54 FVFLQKYPHTHLVHQANPRGS 74


RESULT 5
US-08-525-596B-6
; Sequence 6, Application US/08525596B
; Patent No. 5827733
;  GENERAL INFORMATION:
;    APPLICANT:  Huynh, Thanh
;    APPLICANT:  Lee, Se-Jin
;    TITLE OF INVENTION:  GROWTH DIFFERENTIATION FACTOR-8
;    NUMBER OF SEQUENCES:  32
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Fish & Richardson P.C.
;      STREET:  4225 Executive Square, Suite 1400
;      CITY:  La Jolla
;      STATE:  CA
;      COUNTRY:  US
;      ZIP:  92037
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Diskette
;      COMPUTER:  IBM Compatible
;      OPERATING SYSTEM:  Windows95
;      SOFTWARE:  FastSEQ for Windows Version 2.0
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/525,596B
;      FILING DATE:  19-SEP-1995
;      CLASSIFICATION:  514
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  PCT/US94/07762
;      FILING DATE:  08-JUL-1994
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Wetherell, Jr., Ph.D, John R.
;      REGISTRATION NUMBER:  31,678
;      REFERENCE/DOCKET NUMBER:  07265/075001
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  619-678-5070
;      TELEFAX:  619-678-5099
;  INFORMATION FOR SEQ ID NO:  6:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  126 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
;    FRAGMENT TYPE:  internal
US-08-525-596B-6

  Query Match             100.0%;  Score 118;  DB 2;  Length 126;
  Best Local Similarity   100.0%;  Pred. No. 2.7e-11;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
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Db      66 FVFLQKYPHTHLVHQANPRGS 86


RESULT 6
US-09-177-860A-6
; Sequence 6, Application US/09177860A
; Patent No. 6096506
;  GENERAL INFORMATION:
;    APPLICANT:  Huynh, Thanh
;    APPLICANT:  Lee, Se-Jin
;    TITLE OF INVENTION:  ANTIBODIES SPECIFIC FOR GROWTH DIFFERENTIATION FACTOR-8 AN
;    NUMBER OF SEQUENCES:  32
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Gray Cary Ware & Freidenrich LLP
;      STREET:  4365 Executive Drive, Suite 1600
;      CITY:  San Diego
;      STATE:  CA
;      COUNTRY:  US
;      ZIP:  92121
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Diskette
;      COMPUTER:  IBM Compatible
;      OPERATING SYSTEM:  Windows95
;      SOFTWARE:  FastSEQ for Windows Version 2.0
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/09/177,860A
;      FILING DATE:  23-OCT-1998
;      CLASSIFICATION:  424
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  08/525,596
;      FILING DATE:  19-SEP-1995
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Haile, Ph.D, Lisa A.
;      REGISTRATION NUMBER:  38,347
;      REFERENCE/DOCKET NUMBER:  07265/075003
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  858-677-1456
;      TELEFAX:  858-677-1465
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;  INFORMATION FOR SEQ ID NO:  6:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  126 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
;    FRAGMENT TYPE:  internal
US-09-177-860A-6

  Query Match             100.0%;  Score 118;  DB 3;  Length 126;
  Best Local Similarity   100.0%;  Pred. No. 2.7e-11;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db      66 FVFLQKYPHTHLVHQANPRGS 86


RESULT 7
US-09-378-238-6
; Sequence 6, Application US/09378238
; Patent No. 6465239
; GENERAL INFORMATION:
;  APPLICANT: Lee, Se-Jin
;  APPLICANT: McPherron, Alexandra C.
;  TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR-8 NUCLEIC
;  TITLE OF INVENTION: ACID AND POLYPEPTIDES FROM AQUATIC SPECIES AND NON-HUMAN
;  TITLE OF INVENTION: TRANSGENIC AQUATIC SPECIES
;  FILE REFERENCE: JHU1120-9
;  CURRENT APPLICATION NUMBER: US/09/378,238
;  CURRENT FILING DATE: 1999-08-19
;  EARLIER APPLICATION NUMBER: 08/795,071
;  EARLIER FILING DATE: 1997-02-05
;  EARLIER APPLICATION NUMBER: 08/525,596
;  EARLIER FILING DATE: 1995-10-25
;  EARLIER APPLICATION NUMBER: PCT/US94/03019
;  EARLIER FILING DATE: 1994-03-18
;  EARLIER APPLICATION NUMBER: 08/033,923
;  EARLIER FILING DATE: 1993-03-19
;  NUMBER OF SEQ ID NOS: 41
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 6
;   LENGTH: 126
;   TYPE: PRT
;   ORGANISM: Mus musculus
US-09-378-238-6

  Query Match             100.0%;  Score 118;  DB 4;  Length 126;
  Best Local Similarity   100.0%;  Pred. No. 2.7e-11;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db      66 FVFLQKYPHTHLVHQANPRGS 86


RESULT 8
US-09-451-501-6
; Sequence 6, Application US/09451501
; Patent No. 6468535
;   GENERAL INFORMATION:
;        APPLICANT: Se-Jin Lee et al.,
;        TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR-8
;        NUMBER OF SEQUENCES: 27
;        CORRESPONDENCE ADDRESS:
;             ADDRESSEE: Fish & Richardson P.C.
;             STREET: 4225 Executive Square, Suite 1400
;             CITY: La Jolla
;             STATE: CA
;             COUNTRY: US
;             ZIP: 92037
;        COMPUTER READABLE FORM:
;             MEDIUM TYPE: Diskette
;             COMPUTER: IBM Compatible
;             OPERATING SYSTEM: Windows95
;             SOFTWARE: FastSEQ for Windows Version 2.0
;        CURRENT APPLICATION DATA:
;             APPLICATION NUMBER: US/09/451,501
;             FILING DATE: 30-No. 6468535-1999
;             CLASSIFICATION: <Unknown>
;        PRIOR APPLICATION DATA:
;             APPLICATION NUMBER: 08/795,071
;             FILING DATE: <Unknown>
;             APPLICATION NUMBER: PCT/US94/03019
;             FILING DATE: 18-March-1994
;        ATTORNEY/AGENT INFORMATION:
;             NAME: Lisa A. Haile, Ph.D.
;             REGISTRATION NUMBER: 38,347
;             REFERENCE/DOCKET NUMBER: 07265/105001
;        TELECOMMUNICATION INFORMATION:
;             TELEPHONE: 619/678-5070
;             TELEFAX: 619/678-5099
;   INFORMATION FOR SEQ ID NO: 6:
;        SEQUENCE CHARACTERISTICS:
;             LENGTH: 126 amino acids
;             TYPE: amino acid
;             TOPOLOGY: linear
;        MOLECULE TYPE: protein
;        FRAGMENT TYPE: internal
;        SEQUENCE DESCRIPTION: SEQ ID NO: 6:
US-09-451-501-6

  Query Match             100.0%;  Score 118;  DB 4;  Length 126;
  Best Local Similarity   100.0%;  Pred. No. 2.7e-11;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db      66 FVFLQKYPHTHLVHQANPRGS 86


RESULT 9
US-09-378-238-21
; Sequence 21, Application US/09378238
; Patent No. 6465239
; GENERAL INFORMATION:
;  APPLICANT: Lee, Se-Jin
;  APPLICANT: McPherron, Alexandra C.
;  TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR-8 NUCLEIC
;  TITLE OF INVENTION: ACID AND POLYPEPTIDES FROM AQUATIC SPECIES AND NON-HUMAN
;  TITLE OF INVENTION: TRANSGENIC AQUATIC SPECIES
;  FILE REFERENCE: JHU1120-9
;  CURRENT APPLICATION NUMBER: US/09/378,238
;  CURRENT FILING DATE: 1999-08-19
;  EARLIER APPLICATION NUMBER: 08/795,071
;  EARLIER FILING DATE: 1997-02-05
;  EARLIER APPLICATION NUMBER: 08/525,596
;  EARLIER FILING DATE: 1995-10-25
;  EARLIER APPLICATION NUMBER: PCT/US94/03019
;  EARLIER FILING DATE: 1994-03-18
;  EARLIER APPLICATION NUMBER: 08/033,923
;  EARLIER FILING DATE: 1993-03-19
;  NUMBER OF SEQ ID NOS: 41
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 21
;   LENGTH: 130
;   TYPE: PRT
;   ORGANISM: Rattus norvegicus
US-09-378-238-21

  Query Match             100.0%;  Score 118;  DB 4;  Length 130;
  Best Local Similarity   100.0%;  Pred. No. 2.8e-11;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
```

```
Db      70 FVFLQKYPHTHLVHQANPRGS 90


RESULT 10
US-09-378-238-19
; Sequence 19, Application US/09378238
; Patent No. 6465239
; GENERAL INFORMATION:
;  APPLICANT: Lee, Se-Jin
;  APPLICANT: McPherron, Alexandra C.
;  TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR-8 NUCLEIC
;  TITLE OF INVENTION: ACID AND POLYPEPTIDES FROM AQUATIC SPECIES AND NON-HUMAN
;  TITLE OF INVENTION: TRANSGENIC AQUATIC SPECIES
;  FILE REFERENCE: JHU1120-9
;  CURRENT APPLICATION NUMBER: US/09/378,238
;  CURRENT FILING DATE: 1999-08-19
;  EARLIER APPLICATION NUMBER: 08/795,071
;  EARLIER FILING DATE: 1997-02-05
;  EARLIER APPLICATION NUMBER: 08/525,596
;  EARLIER FILING DATE: 1995-10-25
;  EARLIER APPLICATION NUMBER: PCT/US94/03019
;  EARLIER FILING DATE: 1994-03-18
;  EARLIER APPLICATION NUMBER: 08/033,923
;  EARLIER FILING DATE: 1993-03-19
;  NUMBER OF SEQ ID NOS: 41
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 19
;   LENGTH: 225
;   TYPE: PRT
;   ORGANISM: Gallus gallus
US-09-378-238-19

  Query Match             100.0%;  Score 118;  DB 4;  Length 225;
  Best Local Similarity   100.0%;  Pred. No. 5.1e-11;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db     165 FVFLQKYPHTHLVHQANPRGS 185


RESULT 11
US-08-525-596B-14
; Sequence 14, Application US/08525596B
; Patent No. 5827733
;  GENERAL INFORMATION:
;    APPLICANT:  Huynh, Thanh
;    APPLICANT:  Lee, Se-Jin
;    TITLE OF INVENTION:  GROWTH DIFFERENTIATION FACTOR-8
;    NUMBER OF SEQUENCES:  32
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Fish & Richardson P.C.
;      STREET:  4225 Executive Square, Suite 1400
;      CITY:  La Jolla
;      STATE:  CA
;      COUNTRY:  US
;      ZIP:  92037
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Diskette
;      COMPUTER:  IBM Compatible
;      OPERATING SYSTEM:  Windows95
;      SOFTWARE:  FastSEQ for Windows Version 2.0
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/525,596B
;      FILING DATE:  19-SEP-1995
;      CLASSIFICATION:  514
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  PCT/US94/07762
;      FILING DATE:  08-JUL-1994
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Wetherell, Jr., Ph.D, John R.
;      REGISTRATION NUMBER:  31,678
;      REFERENCE/DOCKET NUMBER:  07265/075001
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  619-678-5070
;      TELEFAX:  619-678-5099
;  INFORMATION FOR SEQ ID NO:  14:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  375 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
;    FRAGMENT TYPE:  internal
US-08-525-596B-14

  Query Match             100.0%;  Score 118;  DB 2;  Length 375;
  Best Local Similarity   100.0%;  Pred. No. 8.8e-11;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db     315 FVFLQKYPHTHLVHQANPRGS 335


RESULT 12
US-08-765-875-5
; Sequence 5, Application US/08765875
; Patent No. 5914234
;  GENERAL INFORMATION:
;    APPLICANT:  LEE, SE-JIN
;    APPLICANT:  MCPHERRON, ALEXANDRA C.
;    TITLE OF INVENTION:  GROWTH DIFFERENTIATION FACTOR-11
;    NUMBER OF SEQUENCES:  9
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  SPENSLEY HORN JUBAS & LUBITZ
;      STREET:  1880 CENTURY PARK EAST, FIFTH FLOOR
;      CITY:  LOS ANGELES
;      STATE:  CALIFORNIA
;      COUNTRY:  US
;      ZIP:  90067
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/765,875
;      FILING DATE:
;      CLASSIFICATION:
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/706,958
;      FILING DATE:
;      APPLICATION NUMBER:  US/08/272,763
;      FILING DATE:  08-JUL-1994
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  TUMARKIN PH.D., LISA A.
;      REGISTRATION NUMBER:  P-38,347
;      REFERENCE/DOCKET NUMBER:  PD3641
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  619/455-5100
;      TELEFAX:  619/455-5110
;  INFORMATION FOR SEQ ID NO:  5:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  375 amino acids
;      TYPE:  amino acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
;    IMMEDIATE SOURCE:
;      CLONE:  GDF-8
;    FEATURE:
;      NAME/KEY:  Protein
;      LOCATION:  1..375
US-08-765-875-5

  Query Match             100.0%;  Score 118;  DB 2;  Length 375;
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  Best Local Similarity   100.0%;  Pred. No. 8.8e-11;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db     315 FVFLQKYPHTHLVHQANPRGS 335


RESULT 13
US-08-795-671-5
; Sequence 5, Application US/08795671
; Patent No. 6008434
;  GENERAL INFORMATION:
;    APPLICANT:  Se-Jin Lee and Alexandra McPherron
;    TITLE OF INVENTION:  GROWTH DIFFERENTIATION FACTOR-11
;    NUMBER OF SEQUENCES:  9
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Fish & Richardson P.C.
;      STREET:  4225 Executive Square, Suite 1400
;      CITY:  La Jolla
;      STATE:  California
;      COUNTRY:  US
;      ZIP:  92037
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/795,671
;      FILING DATE:  February 6, 1997
;      CLASSIFICATION:  800
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  HAILE, PH.D., LISA A.
;      REGISTRATION NUMBER:  38,347
;      REFERENCE/DOCKET NUMBER:  07265/106001
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  619/678-5070
;      TELEFAX:  619/678-5099
;  INFORMATION FOR SEQ ID NO:  5:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  375 amino acids
;      TYPE:  amino acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
;    IMMEDIATE SOURCE:
;      CLONE:  GDF-8
;    FEATURE:
;      NAME/KEY:  Protein
;      LOCATION:  1..375
US-08-795-671-5

  Query Match             100.0%;  Score 118;  DB 3;  Length 375;
  Best Local Similarity   100.0%;  Pred. No. 8.8e-11;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db     315 FVFLQKYPHTHLVHQANPRGS 335


RESULT 14
US-09-177-860A-14
; Sequence 14, Application US/09177860A
; Patent No. 6096506
;  GENERAL INFORMATION:
;    APPLICANT:  Huynh, Thanh
;    APPLICANT:  Lee, Se-Jin
;    TITLE OF INVENTION:  ANTIBODIES SPECIFIC FOR GROWTH DIFFERENTIATION FACTOR-8 AN
;    NUMBER OF SEQUENCES:  32
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Gray Cary Ware & Freidenrich LLP
;      STREET:  4365 Executive Drive, Suite 1600
;      CITY:  San Diego
;      STATE:  CA
;      COUNTRY:  US
;      ZIP:  92121
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Diskette
;      COMPUTER:  IBM Compatible
;      OPERATING SYSTEM:  Windows95
;      SOFTWARE:  FastSEQ for Windows Version 2.0
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/09/177,860A
;      FILING DATE:  23-OCT-1998
;      CLASSIFICATION:  424
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  08/525,596
;      FILING DATE:  19-SEP-1995
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Haile, Ph.D, Lisa A.
;      REGISTRATION NUMBER:  38,347
;      REFERENCE/DOCKET NUMBER:  07265/075003
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  858-677-1456
;      TELEFAX:  858-677-1465
;  INFORMATION FOR SEQ ID NO:  14:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  375 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
;    FRAGMENT TYPE:  internal
US-09-177-860A-14

  Query Match             100.0%;  Score 118;  DB 3;  Length 375;
  Best Local Similarity   100.0%;  Pred. No. 8.8e-11;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db     315 FVFLQKYPHTHLVHQANPRGS 335


RESULT 15
US-08-891-789B-2
; Sequence 2, Application US/08891789B
; Patent No. 6103466
;  GENERAL INFORMATION:
;    APPLICANT:  Grobet, Luc; Georges, Michel
;    TITLE OF INVENTION:  Double-Muscling in Mammals
;    NUMBER OF SEQUENCES:  52
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Blake, Cassels & Graydon
;      STREET:  Box 25, Commerce Court West
;      CITY:  Toronto
;      STATE:  Ontario
;      ZIP:  M5L 1A9
;      COUNTRY:  Canada
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Diskette, 3 1/2 inch, 1.4 Mb storage
;      COMPUTER:  COMPAQ, IBM PC compatible
;      OPERATING SYSTEM:  MS-DOS 5.1
;      SOFTWARE:  WORD PERFECT
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/891,789B
;      FILING DATE:  July 14, 1997
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Hunt, John C.
;      REGISTRATION NUMBER:  36,424
;      REFERENCE/DOCKET NUMBER:  52836/00004
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (416) 863-4344
;      TELEFAX:  (416) 863-2653
;  INFORMATION FOR SEQ ID NO:  2:
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;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  375 amino acids
;      TYPE:  amino acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
US-08-891-789B-2

  Query Match             100.0%;  Score 118;  DB 3;  Length 375;
  Best Local Similarity   100.0%;  Pred. No. 8.8e-11;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db     315 FVFLQKYPHTHLVHQANPRGS 335


RESULT 16
US-09-252-149B-2
; Sequence 2, Application US/09252149B
; Patent No. 6369201
; GENERAL INFORMATION:
;  APPLICANT: Barker, Christopher A.
;  APPLICANT:  Morsey, Mohamad
;  TITLE OF INVENTION: IMMUNOLOGICAL METHODS TO MODULAR MYOSTATIN IN
;  TITLE OF INVENTION:  VERTEBRATE SUBJECTS
;  FILE REFERENCE: 9001-0042
;  CURRENT APPLICATION NUMBER: US/09/252,149B
;  CURRENT FILING DATE:  1999-02-18
;  PRIOR APPLICATION NUMBER: 60/075,213
;  PRIOR FILING DATE: 1998-02-19
;  NUMBER OF SEQ ID NOS: 39
;  SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 2
;   LENGTH: 375
;   TYPE: PRT
;   ORGANISM: bos taurus
US-09-252-149B-2

  Query Match             100.0%;  Score 118;  DB 4;  Length 375;
  Best Local Similarity   100.0%;  Pred. No. 8.8e-11;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db     315 FVFLQKYPHTHLVHQANPRGS 335


RESULT 17
US-09-252-149B-29
; Sequence 29, Application US/09252149B
; Patent No. 6369201
; GENERAL INFORMATION:
;  APPLICANT: Barker, Christopher A.
;  APPLICANT:  Morsey, Mohamad
;  TITLE OF INVENTION: IMMUNOLOGICAL METHODS TO MODULAR MYOSTATIN IN
;  TITLE OF INVENTION:  VERTEBRATE SUBJECTS
;  FILE REFERENCE: 9001-0042
;  CURRENT APPLICATION NUMBER: US/09/252,149B
;  CURRENT FILING DATE:  1999-02-18
;  PRIOR APPLICATION NUMBER: 60/075,213
;  PRIOR FILING DATE: 1998-02-19
;  NUMBER OF SEQ ID NOS: 39
;  SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 29
;   LENGTH: 375
;   TYPE: PRT
;   ORGANISM: Homo sapiens
US-09-252-149B-29

  Query Match             100.0%;  Score 118;  DB 4;  Length 375;
  Best Local Similarity   100.0%;  Pred. No. 8.8e-11;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db     315 FVFLQKYPHTHLVHQANPRGS 335


RESULT 18
US-09-252-149B-30
; Sequence 30, Application US/09252149B
; Patent No. 6369201
; GENERAL INFORMATION:
;  APPLICANT: Barker, Christopher A.
;  APPLICANT:  Morsey, Mohamad
;  TITLE OF INVENTION: IMMUNOLOGICAL METHODS TO MODULAR MYOSTATIN IN
;  TITLE OF INVENTION:  VERTEBRATE SUBJECTS
;  FILE REFERENCE: 9001-0042
;  CURRENT APPLICATION NUMBER: US/09/252,149B
;  CURRENT FILING DATE:  1999-02-18
;  PRIOR APPLICATION NUMBER: 60/075,213
;  PRIOR FILING DATE: 1998-02-19
;  NUMBER OF SEQ ID NOS: 39
;  SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 30
;   LENGTH: 375
;   TYPE: PRT
;   ORGANISM: Papio hamadryas
US-09-252-149B-30

  Query Match             100.0%;  Score 118;  DB 4;  Length 375;
  Best Local Similarity   100.0%;  Pred. No. 8.8e-11;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db     315 FVFLQKYPHTHLVHQANPRGS 335


RESULT 19
US-09-252-149B-31
; Sequence 31, Application US/09252149B
; Patent No. 6369201
; GENERAL INFORMATION:
;  APPLICANT: Barker, Christopher A.
;  APPLICANT:  Morsey, Mohamad
;  TITLE OF INVENTION: IMMUNOLOGICAL METHODS TO MODULAR MYOSTATIN IN
;  TITLE OF INVENTION:  VERTEBRATE SUBJECTS
;  FILE REFERENCE: 9001-0042
;  CURRENT APPLICATION NUMBER: US/09/252,149B
;  CURRENT FILING DATE:  1999-02-18
;  PRIOR APPLICATION NUMBER: 60/075,213
;  PRIOR FILING DATE: 1998-02-19
;  NUMBER OF SEQ ID NOS: 39
;  SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 31
;   LENGTH: 375
;   TYPE: PRT
;   ORGANISM: bos taurus
US-09-252-149B-31

  Query Match             100.0%;  Score 118;  DB 4;  Length 375;
  Best Local Similarity   100.0%;  Pred. No. 8.8e-11;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db     315 FVFLQKYPHTHLVHQANPRGS 335


RESULT 20
US-09-252-149B-32
; Sequence 32, Application US/09252149B
; Patent No. 6369201
; GENERAL INFORMATION:
;  APPLICANT: Barker, Christopher A.
```

```
;  APPLICANT:  Morsey, Mohamad
;  TITLE OF INVENTION: IMMUNOLOGICAL METHODS TO MODULAR MYOSTATIN IN
;  TITLE OF INVENTION:  VERTEBRATE SUBJECTS
;  FILE REFERENCE: 9001-0042
;  CURRENT APPLICATION NUMBER: US/09/252,149B
;  CURRENT FILING DATE:  1999-02-18
;  PRIOR APPLICATION NUMBER: 60/075,213
;  PRIOR FILING DATE: 1998-02-19
;  NUMBER OF SEQ ID NOS: 39
;  SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 32
;   LENGTH: 375
;   TYPE: PRT
;   ORGANISM: Sus scrofa
US-09-252-149B-32

  Query Match             100.0%;  Score 118;  DB 4;  Length 375;
  Best Local Similarity   100.0%;  Pred. No. 8.8e-11;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      1 FVFLQKYPHTHLVHQANPRGS 21
          |||||||||||||||||||||
Db    315 FVFLQKYPHTHLVHQANPRGS 335


RESULT 21
US-09-252-149B-34
; Sequence 34, Application US/09252149B
; Patent No. 6369201
; GENERAL INFORMATION:
;  APPLICANT: Barker, Christopher A.
;  APPLICANT:  Morsey, Mohamad
;  TITLE OF INVENTION: IMMUNOLOGICAL METHODS TO MODULAR MYOSTATIN IN
;  TITLE OF INVENTION:  VERTEBRATE SUBJECTS
;  FILE REFERENCE: 9001-0042
;  CURRENT APPLICATION NUMBER: US/09/252,149B
;  CURRENT FILING DATE:  1999-02-18
;  PRIOR APPLICATION NUMBER: 60/075,213
;  PRIOR FILING DATE: 1998-02-19
;  NUMBER OF SEQ ID NOS: 39
;  SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 34
;   LENGTH: 375
;   TYPE: PRT
;   ORGANISM: Gallus gallus
US-09-252-149B-34

  Query Match             100.0%;  Score 118;  DB 4;  Length 375;
  Best Local Similarity   100.0%;  Pred. No. 8.8e-11;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      1 FVFLQKYPHTHLVHQANPRGS 21
          |||||||||||||||||||||
Db    315 FVFLQKYPHTHLVHQANPRGS 335


RESULT 22
US-09-252-149B-35
; Sequence 35, Application US/09252149B
; Patent No. 6369201
; GENERAL INFORMATION:
;  APPLICANT: Barker, Christopher A.
;  APPLICANT:  Morsey, Mohamad
;  TITLE OF INVENTION: IMMUNOLOGICAL METHODS TO MODULAR MYOSTATIN IN
;  TITLE OF INVENTION:  VERTEBRATE SUBJECTS
;  FILE REFERENCE: 9001-0042
;  CURRENT APPLICATION NUMBER: US/09/252,149B
;  CURRENT FILING DATE:  1999-02-18
;  PRIOR APPLICATION NUMBER: 60/075,213
;  PRIOR FILING DATE: 1998-02-19
;  NUMBER OF SEQ ID NOS: 39
;  SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 35
;   LENGTH: 375
;   TYPE: PRT
;   ORGANISM: Meleagris gallopavo
US-09-252-149B-35

  Query Match             100.0%;  Score 118;  DB 4;  Length 375;
  Best Local Similarity   100.0%;  Pred. No. 8.8e-11;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      1 FVFLQKYPHTHLVHQANPRGS 21
          |||||||||||||||||||||
Db    315 FVFLQKYPHTHLVHQANPRGS 335


RESULT 23
US-09-378-238-14
; Sequence 14, Application US/09378238
; Patent No. 6465239
; GENERAL INFORMATION:
;  APPLICANT: Lee, Se-Jin
;  APPLICANT: McPherron, Alexandra C.
;  TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR-8 NUCLEIC
;  TITLE OF INVENTION: ACID AND POLYPEPTIDES FROM AQUATIC SPECIES AND NON-HUMAN
;  TITLE OF INVENTION: TRANSGENIC AQUATIC SPECIES
;  FILE REFERENCE: JHU1120-9
;  CURRENT APPLICATION NUMBER: US/09/378,238
;  CURRENT FILING DATE: 1999-08-19
;  EARLIER APPLICATION NUMBER: 08/795,071
;  EARLIER FILING DATE: 1997-02-05
;  EARLIER APPLICATION NUMBER: 08/525,596
;  EARLIER FILING DATE: 1995-10-25
;  EARLIER APPLICATION NUMBER: PCT/US94/03019
;  EARLIER FILING DATE: 1994-03-18
;  EARLIER APPLICATION NUMBER: 08/033,923
;  EARLIER FILING DATE: 1993-03-19
;  NUMBER OF SEQ ID NOS: 41
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 14
;   LENGTH: 375
;   TYPE: PRT
;   ORGANISM: Homo sapiens
US-09-378-238-14

  Query Match             100.0%;  Score 118;  DB 4;  Length 375;
  Best Local Similarity   100.0%;  Pred. No. 8.8e-11;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      1 FVFLQKYPHTHLVHQANPRGS 21
          |||||||||||||||||||||
Db    315 FVFLQKYPHTHLVHQANPRGS 335


RESULT 24
US-09-451-501-14
; Sequence 14, Application US/09451501
; Patent No. 6468535
;   GENERAL INFORMATION:
;        APPLICANT: Se-Jin Lee et al.,
;        TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR-8
;        NUMBER OF SEQUENCES: 27
;        CORRESPONDENCE ADDRESS:
;             ADDRESSEE: Fish & Richardson P.C.
;             STREET: 4225 Executive Square, Suite 1400
;             CITY: La Jolla
;             STATE: CA
;             COUNTRY: US
;             ZIP: 92037
;        COMPUTER READABLE FORM:
;             MEDIUM TYPE: Diskette
;             COMPUTER: IBM Compatible
;             OPERATING SYSTEM: Windows95
;             SOFTWARE: FastSEQ for Windows Version 2.0
;        CURRENT APPLICATION DATA:
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;             APPLICATION NUMBER: US/09/451,501
;             FILING DATE: 30-No. 6468535-1999
;             CLASSIFICATION: <Unknown>
;        PRIOR APPLICATION DATA:
;             APPLICATION NUMBER: 08/795,071
;             FILING DATE: <Unknown>
;             APPLICATION NUMBER: PCT/US94/03019
;             FILING DATE: 18-March-1994
;        ATTORNEY/AGENT INFORMATION:
;             NAME: Lisa A. Haile, Ph.D.
;             REGISTRATION NUMBER: 38,347
;             REFERENCE/DOCKET NUMBER: 07265/105001
;        TELECOMMUNICATION INFORMATION:
;             TELEPHONE: 619/678-5070
;             TELEFAX: 619/678-5099
;   INFORMATION FOR SEQ ID NO: 14:
;        SEQUENCE CHARACTERISTICS:
;             LENGTH: 375 amino acids
;             TYPE: amino acid
;             TOPOLOGY: linear
;        MOLECULE TYPE: protein
;        FRAGMENT TYPE: internal
;        SEQUENCE DESCRIPTION: SEQ ID NO: 14:
US-09-451-501-14

  Query Match             100.0%;  Score 118;  DB 4;  Length 375;
  Best Local Similarity   100.0%;  Pred. No. 8.8e-11;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db     315 FVFLQKYPHTHLVHQANPRGS 335


RESULT 25
US-09-451-501-19
; Sequence 19, Application US/09451501
; Patent No. 6468535
;   GENERAL INFORMATION:
;        APPLICANT: Se-Jin Lee et al.,
;        TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR-8
;        NUMBER OF SEQUENCES: 27
;        CORRESPONDENCE ADDRESS:
;             ADDRESSEE: Fish & Richardson P.C.
;             STREET: 4225 Executive Square, Suite 1400
;             CITY: La Jolla
;             STATE: CA
;             COUNTRY: US
;             ZIP: 92037
;        COMPUTER READABLE FORM:
;             MEDIUM TYPE: Diskette
;             COMPUTER: IBM Compatible
;             OPERATING SYSTEM: Windows95
;             SOFTWARE: FastSEQ for Windows Version 2.0
;        CURRENT APPLICATION DATA:
;             APPLICATION NUMBER: US/09/451,501
;             FILING DATE: 30-No. 6468535-1999
;             CLASSIFICATION: <Unknown>
;        PRIOR APPLICATION DATA:
;             APPLICATION NUMBER: 08/795,071
;             FILING DATE: <Unknown>
;             APPLICATION NUMBER: PCT/US94/03019
;             FILING DATE: 18-March-1994
;        ATTORNEY/AGENT INFORMATION:
;             NAME: Lisa A. Haile, Ph.D.
;             REGISTRATION NUMBER: 38,347
;             REFERENCE/DOCKET NUMBER: 07265/105001
;        TELECOMMUNICATION INFORMATION:
;             TELEPHONE: 619/678-5070
;             TELEFAX: 619/678-5099
;   INFORMATION FOR SEQ ID NO: 19:
;        SEQUENCE CHARACTERISTICS:
;             LENGTH: 375 amino acids
;             TYPE: amino acid
;             TOPOLOGY: linear
;        MOLECULE TYPE: protein
;        IMMEDIATE SOURCE:
;             CLONE: Baboon GDF-8
;        FEATURE:
;             NAME/KEY:  Protein
;             LOCATION:  1...375
;             OTHER INFORMATION:
;        SEQUENCE DESCRIPTION: SEQ ID NO: 19:
US-09-451-501-19

  Query Match             100.0%;  Score 118;  DB 4;  Length 375;
  Best Local Similarity   100.0%;  Pred. No. 8.8e-11;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db     315 FVFLQKYPHTHLVHQANPRGS 335


RESULT 26
US-09-451-501-21
; Sequence 21, Application US/09451501
; Patent No. 6468535
;   GENERAL INFORMATION:
;        APPLICANT: Se-Jin Lee et al.,
;        TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR-8
;        NUMBER OF SEQUENCES: 27
;        CORRESPONDENCE ADDRESS:
;             ADDRESSEE: Fish & Richardson P.C.
;             STREET: 4225 Executive Square, Suite 1400
;             CITY: La Jolla
;             STATE: CA
;             COUNTRY: US
;             ZIP: 92037
;        COMPUTER READABLE FORM:
;             MEDIUM TYPE: Diskette
;             COMPUTER: IBM Compatible
;             OPERATING SYSTEM: Windows95
;             SOFTWARE: FastSEQ for Windows Version 2.0
;        CURRENT APPLICATION DATA:
;             APPLICATION NUMBER: US/09/451,501
;             FILING DATE: 30-No. 6468535-1999
;             CLASSIFICATION: <Unknown>
;        PRIOR APPLICATION DATA:
;             APPLICATION NUMBER: 08/795,071
;             FILING DATE: <Unknown>
;             APPLICATION NUMBER: PCT/US94/03019
;             FILING DATE: 18-March-1994
;        ATTORNEY/AGENT INFORMATION:
;             NAME: Lisa A. Haile, Ph.D.
;             REGISTRATION NUMBER: 38,347
;             REFERENCE/DOCKET NUMBER: 07265/105001
;        TELECOMMUNICATION INFORMATION:
;             TELEPHONE: 619/678-5070
;             TELEFAX: 619/678-5099
;   INFORMATION FOR SEQ ID NO: 21:
;        SEQUENCE CHARACTERISTICS:
;             LENGTH: 375 amino acids
;             TYPE: amino acid
;             TOPOLOGY: linear
;        MOLECULE TYPE: protein
;        FRAGMENT TYPE: internal
;        SEQUENCE DESCRIPTION: SEQ ID NO: 21:
US-09-451-501-21

  Query Match             100.0%;  Score 118;  DB 4;  Length 375;
  Best Local Similarity   100.0%;  Pred. No. 8.8e-11;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
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Db    315 FVFLQKYPHTHLVHQANPRGS 335


RESULT 27
US-09-451-501-23
; Sequence 23, Application US/09451501
; Patent No. 6468535
;   GENERAL INFORMATION:
;        APPLICANT: Se-Jin Lee et al.,
;        TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR-8
;        NUMBER OF SEQUENCES: 27
;        CORRESPONDENCE ADDRESS:
;             ADDRESSEE: Fish & Richardson P.C.
;             STREET: 4225 Executive Square, Suite 1400
;             CITY: La Jolla
;             STATE: CA
;             COUNTRY: US
;             ZIP: 92037
;        COMPUTER READABLE FORM:
;             MEDIUM TYPE: Diskette
;             COMPUTER: IBM Compatible
;             OPERATING SYSTEM: Windows95
;             SOFTWARE: FastSEQ for Windows Version 2.0
;        CURRENT APPLICATION DATA:
;             APPLICATION NUMBER: US/09/451,501
;             FILING DATE: 30-No. 6468535-1999
;             CLASSIFICATION: <Unknown>
;        PRIOR APPLICATION DATA:
;             APPLICATION NUMBER: 08/795,071
;             FILING DATE: <Unknown>
;             APPLICATION NUMBER: PCT/US94/03019
;             FILING DATE: 18-March-1994
;        ATTORNEY/AGENT INFORMATION:
;             NAME: Lisa A. Haile, Ph.D.
;             REGISTRATION NUMBER: 38,347
;             REFERENCE/DOCKET NUMBER: 07265/105001
;        TELECOMMUNICATION INFORMATION:
;             TELEPHONE: 619/678-5070
;             TELEFAX: 619/678-5099
;   INFORMATION FOR SEQ ID NO: 23:
;        SEQUENCE CHARACTERISTICS:
;             LENGTH: 375 amino acids
;             TYPE: amino acid
;             TOPOLOGY: linear
;        MOLECULE TYPE: protein
;        FRAGMENT TYPE: internal
;        IMMEDIATE SOURCE:
;             CLONE: Chicken GDF-8
;        FEATURE:
;             NAME/KEY:  Protein
;             LOCATION:  1..375
;             OTHER INFORMATION:
;        SEQUENCE DESCRIPTION: SEQ ID NO: 23:
US-09-451-501-23

  Query Match             100.0%;  Score 118;  DB 4;  Length 375;
  Best Local Similarity   100.0%;  Pred. No. 8.8e-11;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      1 FVFLQKYPHTHLVHQANPRGS 21
          |||||||||||||||||||||
Db    315 FVFLQKYPHTHLVHQANPRGS 335


RESULT 28
US-09-451-501-27
; Sequence 27, Application US/09451501
; Patent No. 6468535
;   GENERAL INFORMATION:
;        APPLICANT: Se-Jin Lee et al.,
;        TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR-8
;        NUMBER OF SEQUENCES: 27
;        CORRESPONDENCE ADDRESS:
;             ADDRESSEE: Fish & Richardson P.C.
;             STREET: 4225 Executive Square, Suite 1400
;             CITY: La Jolla
;             STATE: CA
;             COUNTRY: US
;             ZIP: 92037
;        COMPUTER READABLE FORM:
;             MEDIUM TYPE: Diskette
;             COMPUTER: IBM Compatible
;             OPERATING SYSTEM: Windows95
;             SOFTWARE: FastSEQ for Windows Version 2.0
;        CURRENT APPLICATION DATA:
;             APPLICATION NUMBER: US/09/451,501
;             FILING DATE: 30-No. 6468535-1999
;             CLASSIFICATION: <Unknown>
;        PRIOR APPLICATION DATA:
;             APPLICATION NUMBER: 08/795,071
;             FILING DATE: <Unknown>
;             APPLICATION NUMBER: PCT/US94/03019
;             FILING DATE: 18-March-1994
;        ATTORNEY/AGENT INFORMATION:
;             NAME: Lisa A. Haile, Ph.D.
;             REGISTRATION NUMBER: 38,347
;             REFERENCE/DOCKET NUMBER: 07265/105001
;        TELECOMMUNICATION INFORMATION:
;             TELEPHONE: 619/678-5070
;             TELEFAX: 619/678-5099
;   INFORMATION FOR SEQ ID NO: 27:
;        SEQUENCE CHARACTERISTICS:
;             LENGTH: 375 amino acids
;             TYPE: amino acid
;             TOPOLOGY: linear
;        MOLECULE TYPE: protein
;        IMMEDIATE SOURCE:
;             CLONE: Turkey GDF-8
;        FEATURE:
;             NAME/KEY:  Protein
;             LOCATION:  1..376
;             OTHER INFORMATION:
;        SEQUENCE DESCRIPTION: SEQ ID NO: 27:
US-09-451-501-27

  Query Match             100.0%;  Score 118;  DB 4;  Length 375;
  Best Local Similarity   100.0%;  Pred. No. 8.8e-11;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      1 FVFLQKYPHTHLVHQANPRGS 21
          |||||||||||||||||||||
Db    315 FVFLQKYPHTHLVHQANPRGS 335


RESULT 29
US-08-525-596B-12
; Sequence 12, Application US/08525596B
; Patent No. 5827733
;  GENERAL INFORMATION:
;    APPLICANT:  Huynh, Thanh
;    APPLICANT:  Lee, Se-Jin
;    TITLE OF INVENTION:  GROWTH DIFFERENTIATION FACTOR-8
;    NUMBER OF SEQUENCES:  32
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Fish & Richardson P.C.
;      STREET:  4225 Executive Square, Suite 1400
;      CITY:  La Jolla
;      STATE:  CA
;      COUNTRY:  US
;      ZIP:  92037
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Diskette
;      COMPUTER:  IBM Compatible
;      OPERATING SYSTEM:  Windows95
;      SOFTWARE:  FastSEQ for Windows Version 2.0
;    CURRENT APPLICATION DATA:
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;      APPLICATION NUMBER:  US/08/525,596B
;      FILING DATE:  19-SEP-1995
;      CLASSIFICATION:  514
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  PCT/US94/07762
;      FILING DATE:  08-JUL-1994
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Wetherell, Jr., Ph.D, John R.
;      REGISTRATION NUMBER:  31,678
;      REFERENCE/DOCKET NUMBER:  07265/075001
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  619-678-5070
;      TELEFAX:  619-678-5099
;  INFORMATION FOR SEQ ID NO:  12:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  376 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
;    FRAGMENT TYPE:  internal
US-08-525-596B-12

  Query Match             100.0%;  Score 118;  DB 2;  Length 376;
  Best Local Similarity   100.0%;  Pred. No. 8.8e-11;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db     316 FVFLQKYPHTHLVHQANPRGS 336


RESULT 30
US-09-177-860A-12
; Sequence 12, Application US/09177860A
; Patent No. 6096506
;  GENERAL INFORMATION:
;    APPLICANT:  Huynh, Thanh
;    APPLICANT:  Lee, Se-Jin
;    TITLE OF INVENTION:  ANTIBODIES SPECIFIC FOR GROWTH DIFFERENTIATION FACTOR-8 AN
;    NUMBER OF SEQUENCES:  32
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Gray Cary Ware & Freidenrich LLP
;      STREET:  4365 Executive Drive, Suite 1600
;      CITY:  San Diego
;      STATE:  CA
;      COUNTRY:  US
;      ZIP:  92121
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Diskette
;      COMPUTER:  IBM Compatible
;      OPERATING SYSTEM:  Windows95
;      SOFTWARE:  FastSEQ for Windows Version 2.0
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/09/177,860A
;      FILING DATE:  23-OCT-1998
;      CLASSIFICATION:  424
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  08/525,596
;      FILING DATE:  19-SEP-1995
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Haile, Ph.D, Lisa A.
;      REGISTRATION NUMBER:  38,347
;      REFERENCE/DOCKET NUMBER:  07265/075003
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  858-677-1456
;      TELEFAX:  858-677-1465
;  INFORMATION FOR SEQ ID NO:  12:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  376 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
;    FRAGMENT TYPE:  internal
US-09-177-860A-12

  Query Match             100.0%;  Score 118;  DB 3;  Length 376;
  Best Local Similarity   100.0%;  Pred. No. 8.8e-11;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db     316 FVFLQKYPHTHLVHQANPRGS 336


RESULT 31
US-08-891-789B-6
; Sequence 6, Application US/08891789B
; Patent No. 6103466
;  GENERAL INFORMATION:
;    APPLICANT:  Grobet, Luc; Georges, Michel
;    TITLE OF INVENTION:  Double-Muscling in Mammals
;    NUMBER OF SEQUENCES:  52
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Blake, Cassels & Graydon
;      STREET:  Box 25, Commerce Court West
;      CITY:  Toronto
;      STATE:  Ontario
;      ZIP:  M5L 1A9
;      COUNTRY:  Canada
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Diskette, 3 1/2 inch, 1.4 Mb storage
;      COMPUTER:  COMPAQ, IBM PC compatible
;      OPERATING SYSTEM:  MS-DOS 5.1
;      SOFTWARE:  WORD PERFECT
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/891,789B
;      FILING DATE:  July 14, 1997
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Hunt, John C.
;      REGISTRATION NUMBER:  36,424
;      REFERENCE/DOCKET NUMBER:  52836/00004
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (416) 863-4344
;      TELEFAX:  (416) 863-2653
;  INFORMATION FOR SEQ ID NO:  6:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  376 amino acids
;      TYPE:  amino acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
US-08-891-789B-6

  Query Match             100.0%;  Score 118;  DB 3;  Length 376;
  Best Local Similarity   100.0%;  Pred. No. 8.8e-11;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db     316 FVFLQKYPHTHLVHQANPRGS 336


RESULT 32
US-09-252-149B-27
; Sequence 27, Application US/09252149B
; Patent No. 6369201
; GENERAL INFORMATION:
;  APPLICANT: Barker, Christopher A.
;  APPLICANT:  Morsey, Mohamad
;  TITLE OF INVENTION: IMMUNOLOGICAL METHODS TO MODULAR MYOSTATIN IN
;  TITLE OF INVENTION:  VERTEBRATE SUBJECTS
;  FILE REFERENCE: 9001-0042
;  CURRENT APPLICATION NUMBER: US/09/252,149B
;  CURRENT FILING DATE:  1999-02-18
;  PRIOR APPLICATION NUMBER: 60/075,213
;  PRIOR FILING DATE: 1998-02-19
;  NUMBER OF SEQ ID NOS: 39
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;  SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 27
;   LENGTH: 376
;   TYPE: PRT
;   ORGANISM: Mus musculus
US-09-252-149B-27

  Query Match            100.0%;  Score 118;  DB 4;  Length 376;
  Best Local Similarity   100.0%;  Pred. No. 8.8e-11;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      1 FVFLQKYPHTHLVHQANPRGS 21
          |||||||||||||||||||||
Db    316 FVFLQKYPHTHLVHQANPRGS 336


RESULT 33
US-09-252-149B-28
; Sequence 28, Application US/09252149B
; Patent No. 6369201
; GENERAL INFORMATION:
;  APPLICANT: Barker, Christopher A.
;  APPLICANT:  Morsey, Mohamad
;  TITLE OF INVENTION: IMMUNOLOGICAL METHODS TO MODULAR MYOSTATIN IN
;  TITLE OF INVENTION:  VERTEBRATE SUBJECTS
;  FILE REFERENCE: 9001-0042
;  CURRENT APPLICATION NUMBER: US/09/252,149B
;  CURRENT FILING DATE:  1999-02-18
;  PRIOR APPLICATION NUMBER: 60/075,213
;  PRIOR FILING DATE: 1998-02-19
;  NUMBER OF SEQ ID NOS: 39
;  SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 28
;   LENGTH: 376
;   TYPE: PRT
;   ORGANISM: Rattus norvegicus
US-09-252-149B-28

  Query Match            100.0%;  Score 118;  DB 4;  Length 376;
  Best Local Similarity   100.0%;  Pred. No. 8.8e-11;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      1 FVFLQKYPHTHLVHQANPRGS 21
          |||||||||||||||||||||
Db    316 FVFLQKYPHTHLVHQANPRGS 336


RESULT 34
US-09-378-238-12
; Sequence 12, Application US/09378238
; Patent No. 6465239
; GENERAL INFORMATION:
;  APPLICANT: Lee, Se-Jin
;  APPLICANT: McPherron, Alexandra C.
;  TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR-8 NUCLEIC
;  TITLE OF INVENTION: ACID AND POLYPEPTIDES FROM AQUATIC SPECIES AND NON-HUMAN
;  TITLE OF INVENTION: TRANSGENIC AQUATIC SPECIES
;  FILE REFERENCE: JHU1120-9
;  CURRENT APPLICATION NUMBER: US/09/378,238
;  CURRENT FILING DATE: 1999-08-19
;  EARLIER APPLICATION NUMBER: 08/795,071
;  EARLIER FILING DATE: 1997-02-05
;  EARLIER APPLICATION NUMBER: 08/525,596
;  EARLIER FILING DATE: 1995-10-25
;  EARLIER APPLICATION NUMBER: PCT/US94/03019
;  EARLIER FILING DATE: 1994-03-18
;  EARLIER APPLICATION NUMBER: 08/033,923
;  EARLIER FILING DATE: 1993-03-19
;  NUMBER OF SEQ ID NOS: 41
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 12
;   LENGTH: 376
;   TYPE: PRT
;   ORGANISM: Mus musculus
US-09-378-238-12

  Query Match            100.0%;  Score 118;  DB 4;  Length 376;
  Best Local Similarity   100.0%;  Pred. No. 8.8e-11;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      1 FVFLQKYPHTHLVHQANPRGS 21
          |||||||||||||||||||||
Db    316 FVFLQKYPHTHLVHQANPRGS 336


RESULT 35
US-09-451-501-12
; Sequence 12, Application US/09451501
; Patent No. 6468535
;   GENERAL INFORMATION:
;        APPLICANT: Se-Jin Lee et al.,
;        TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR-8
;        NUMBER OF SEQUENCES: 27
;        CORRESPONDENCE ADDRESS:
;             ADDRESSEE: Fish & Richardson P.C.
;             STREET: 4225 Executive Square, Suite 1400
;             CITY: La Jolla
;             STATE: CA
;             COUNTRY: US
;             ZIP: 92037
;        COMPUTER READABLE FORM:
;             MEDIUM TYPE: Diskette
;             COMPUTER: IBM Compatible
;             OPERATING SYSTEM: Windows95
;             SOFTWARE: FastSEQ for Windows Version 2.0
;        CURRENT APPLICATION DATA:
;             APPLICATION NUMBER: US/09/451,501
;             FILING DATE: 30-No. 6468535-1999
;             CLASSIFICATION: <Unknown>
;        PRIOR APPLICATION DATA:
;             APPLICATION NUMBER: 08/795,071
;             FILING DATE: <Unknown>
;             APPLICATION NUMBER: PCT/US94/03019
;             FILING DATE: 18-March-1994
;        ATTORNEY/AGENT INFORMATION:
;             NAME: Lisa A. Haile, Ph.D.
;             REGISTRATION NUMBER: 38,347
;             REFERENCE/DOCKET NUMBER: 07265/105001
;        TELECOMMUNICATION INFORMATION:
;             TELEPHONE: 619/678-5070
;             TELEFAX: 619/678-5099
;   INFORMATION FOR SEQ ID NO: 12:
;        SEQUENCE CHARACTERISTICS:
;             LENGTH: 376 amino acids
;             TYPE: amino acid
;             TOPOLOGY: linear
;        MOLECULE TYPE: protein
;        FRAGMENT TYPE: internal
;        SEQUENCE DESCRIPTION: SEQ ID NO: 12:
US-09-451-501-12

  Query Match            100.0%;  Score 118;  DB 4;  Length 376;
  Best Local Similarity   100.0%;  Pred. No. 8.8e-11;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      1 FVFLQKYPHTHLVHQANPRGS 21
          |||||||||||||||||||||
Db    316 FVFLQKYPHTHLVHQANPRGS 336


RESULT 36
US-09-451-501-25
; Sequence 25, Application US/09451501
; Patent No. 6468535
;   GENERAL INFORMATION:
;        APPLICANT: Se-Jin Lee et al.,
```

```
;        TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR-8
;        NUMBER OF SEQUENCES: 27
;        CORRESPONDENCE ADDRESS:
;             ADDRESSEE: Fish & Richardson P.C.
;             STREET: 4225 Executive Square, Suite 1400
;             CITY: La Jolla
;             STATE: CA
;             COUNTRY: US
;             ZIP: 92037
;        COMPUTER READABLE FORM:
;             MEDIUM TYPE: Diskette
;             COMPUTER: IBM Compatible
;             OPERATING SYSTEM: Windows95
;             SOFTWARE: FastSEQ for Windows Version 2.0
;        CURRENT APPLICATION DATA:
;             APPLICATION NUMBER: US/09/451,501
;             FILING DATE: 30-No. 6468535-1999
;             CLASSIFICATION: <Unknown>
;        PRIOR APPLICATION DATA:
;             APPLICATION NUMBER: 08/795,071
;             FILING DATE: <Unknown>
;             APPLICATION NUMBER: PCT/US94/03019
;             FILING DATE: 18-March-1994
;        ATTORNEY/AGENT INFORMATION:
;             NAME: Lisa A. Haile, Ph.D.
;             REGISTRATION NUMBER: 38,347
;             REFERENCE/DOCKET NUMBER: 07265/105001
;        TELECOMMUNICATION INFORMATION:
;             TELEPHONE: 619/678-5070
;             TELEFAX: 619/678-5099
;   INFORMATION FOR SEQ ID NO: 25:
;        SEQUENCE CHARACTERISTICS:
;             LENGTH: 376 amino acids
;             TYPE: amino acid
;             TOPOLOGY: linear
;        MOLECULE TYPE: protein
;        IMMEDIATE SOURCE:
;             CLONE: Rat GDF-8
;        FEATURE:
;             NAME/KEY:  Protein
;             LOCATION:  1..376
;             OTHER INFORMATION:
;        SEQUENCE DESCRIPTION: SEQ ID NO: 25:
US-09-451-501-25

  Query Match             100.0%;  Score 118;  DB 4;  Length 376;
  Best Local Similarity   100.0%;  Pred. No. 8.8e-11;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||||
Db     316 FVFLQKYPHTHLVHQANPRGS 336


RESULT 37
US-09-252-149B-33
; Sequence 33, Application US/09252149B
; Patent No. 6369201
; GENERAL INFORMATION:
;  APPLICANT: Barker, Christopher A.
;  APPLICANT:  Morsey, Mohamad
;  TITLE OF INVENTION: IMMUNOLOGICAL METHODS TO MODULAR MYOSTATIN IN
;  TITLE OF INVENTION:  VERTEBRATE SUBJECTS
;  FILE REFERENCE: 9001-0042
;  CURRENT APPLICATION NUMBER: US/09/252,149B
;  CURRENT FILING DATE:  1999-02-18
;  PRIOR APPLICATION NUMBER: 60/075,213
;  PRIOR FILING DATE: 1998-02-19
;  NUMBER OF SEQ ID NOS: 39
;  SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 33
;   LENGTH: 375
;   TYPE: PRT
;   ORGANISM: Ovis aries
US-09-252-149B-33

  Query Match             94.9%;  Score 112;  DB 4;  Length 375;
  Best Local Similarity   90.5%;  Pred. No. 7.5e-10;
  Matches   19;  Conservative    2;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |:||||||||||||||||:||
Db     315 FLFLQKYPHTHLVHQANPKGS 335


RESULT 38
US-09-252-149B-12
; Sequence 12, Application US/09252149B
; Patent No. 6369201
; GENERAL INFORMATION:
;  APPLICANT: Barker, Christopher A.
;  APPLICANT:  Morsey, Mohamad
;  TITLE OF INVENTION: IMMUNOLOGICAL METHODS TO MODULAR MYOSTATIN IN
;  TITLE OF INVENTION:  VERTEBRATE SUBJECTS
;  FILE REFERENCE: 9001-0042
;  CURRENT APPLICATION NUMBER: US/09/252,149B
;  CURRENT FILING DATE:  1999-02-18
;  PRIOR APPLICATION NUMBER: 60/075,213
;  PRIOR FILING DATE: 1998-02-19
;  NUMBER OF SEQ ID NOS: 39
;  SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 12
;   LENGTH: 24
;   TYPE: PRT
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Description of Artificial Sequence: MYOS 9 peptide coding sequence
;   OTHER INFORMATION: Figure 6
US-09-252-149B-12

  Query Match             93.2%;  Score 110;  DB 4;  Length 24;
  Best Local Similarity   95.2%;  Pred. No. 8.2e-11;
  Matches   20;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||| |
Db       4 FVFLQKYPHTHLVHQANPRRS 24


RESULT 39
US-09-252-149B-24
; Sequence 24, Application US/09252149B
; Patent No. 6369201
; GENERAL INFORMATION:
;  APPLICANT: Barker, Christopher A.
;  APPLICANT:  Morsey, Mohamad
;  TITLE OF INVENTION: IMMUNOLOGICAL METHODS TO MODULAR MYOSTATIN IN
;  TITLE OF INVENTION:  VERTEBRATE SUBJECTS
;  FILE REFERENCE: 9001-0042
;  CURRENT APPLICATION NUMBER: US/09/252,149B
;  CURRENT FILING DATE:  1999-02-18
;  PRIOR APPLICATION NUMBER: 60/075,213
;  PRIOR FILING DATE: 1998-02-19
;  NUMBER OF SEQ ID NOS: 39
;  SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 24
;   LENGTH: 124
;   TYPE: PRT
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Description of Artificial Sequence: reconstructed
;   OTHER INFORMATION: myostatin active region, Figure 13
US-09-252-149B-24

  Query Match             93.2%;  Score 110;  DB 4;  Length 124;
  Best Local Similarity   95.2%;  Pred. No. 4.7e-10;
```

```
  Matches   20;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           |||||||||||||||||||| |
Db      62 FVFLQKYPHTHLVHQANPRRS 82


RESULT 40
US-08-247-907A-2
; Sequence 2, Application US/08247907A
; Patent No. 5639638
;  GENERAL INFORMATION:
;    APPLICANT:  WOZNEY, John
;    APPLICANT:  CELESTE, Anthony J.
;    TITLE OF INVENTION:  BMP-11 COMPOSITIONS
;    NUMBER OF SEQUENCES:  12
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  GENETICS INSTITUTE, INC.
;      STREET:  87 CambridgePark Drive
;      CITY:  Cambridge
;      STATE:  MA
;      COUNTRY:  USA
;      ZIP:  02140
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/247,907A
;      FILING DATE:  May 20, 1994
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  LAZAR, Steven R.
;      REGISTRATION NUMBER:  32,618
;      REFERENCE/DOCKET NUMBER:  GI5205-A
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  617 876-1170
;      TELEFAX:  617 876-5851
;  INFORMATION FOR SEQ ID NO:  2:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  126 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
US-08-247-907A-2

  Query Match             86.4%;  Score 102;  DB 1;  Length 126;
  Best Local Similarity   81.0%;  Pred. No. 8.5e-09;
  Matches   17;  Conservative    3;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
             ::|:|||||||||  |||||||
Db      66 YMFMQKYPHTHLVQQANPRGS 86


RESULT 41
US-08-452-772-2
; Sequence 2, Application US/08452772
; Patent No. 5700911
;  GENERAL INFORMATION:
;    APPLICANT:  WOZNEY, John
;    APPLICANT:  CELESTE, Anthony J.
;    TITLE OF INVENTION:  BMP-11 COMPOSITIONS
;    NUMBER OF SEQUENCES:  11
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  GENETICS INSTITUTE, INC.
;      STREET:  87 CambridgePark Drive
;      CITY:  Cambridge
;      STATE:  MA
;      COUNTRY:  USA
;      ZIP:  02140
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/452,772
;      FILING DATE:  30-MAY-1995
;      CLASSIFICATION:  530
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US 08/247,907
;      FILING DATE:  20-MAY-1994
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  LAZAR, Steven R.
;      REGISTRATION NUMBER:  32,618
;      REFERENCE/DOCKET NUMBER:  GI5205-CIP
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  617 876-1170
;      TELEFAX:  617 876-5851
;  INFORMATION FOR SEQ ID NO:  2:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  126 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
US-08-452-772-2

  Query Match             86.4%;  Score 102;  DB 1;  Length 126;
  Best Local Similarity   81.0%;  Pred. No. 8.5e-09;
  Matches   17;  Conservative    3;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
             ::|:|||||||||  |||||||
Db      66 YMFMQKYPHTHLVQQANPRGS 86


RESULT 42
US-08-765-875-4
; Sequence 4, Application US/08765875
; Patent No. 5914234
;  GENERAL INFORMATION:
;    APPLICANT:  LEE, SE-JIN
;    APPLICANT:  MCPHERRON, ALEXANDRA C.
;    TITLE OF INVENTION:  GROWTH DIFFERENTIATION FACTOR-11
;    NUMBER OF SEQUENCES:  9
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  SPENSLEY HORN JUBAS & LUBITZ
;      STREET:  1880 CENTURY PARK EAST, FIFTH FLOOR
;      CITY:  LOS ANGELES
;      STATE:  CALIFORNIA
;      COUNTRY:  US
;      ZIP:  90067
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/765,875
;      FILING DATE:
;      CLASSIFICATION:
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/706,958
;      FILING DATE:
;      APPLICATION NUMBER:  US/08/272,763
;      FILING DATE:  08-JUL-1994
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  TUMARKIN PH.D., LISA A.
;      REGISTRATION NUMBER:  P-38,347
;      REFERENCE/DOCKET NUMBER:  PD3641
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  619/455-5100
;      TELEFAX:  619/455-5110
;  INFORMATION FOR SEQ ID NO:  4:
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;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  126 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
US-08-765-875-4

  Query Match             86.4%;  Score 102;  DB 2;  Length 126;
  Best Local Similarity   81.0%;  Pred. No. 8.5e-09;
  Matches   17;  Conservative    3;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           ::|:|||||||||| |||||||
Db      66 YMFMQKYPHTHLVQQANPRGS 86


RESULT 43
US-08-795-671-4
; Sequence 4, Application US/08795671
; Patent No. 6008434
;  GENERAL INFORMATION:
;    APPLICANT:  Se-Jin Lee and Alexandra McPherron
;    TITLE OF INVENTION:  GROWTH DIFFERENTIATION FACTOR-11
;    NUMBER OF SEQUENCES:  9
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Fish & Richardson P.C.
;      STREET:  4225 Executive Square, Suite 1400
;      CITY:  La Jolla
;      STATE:  California
;      COUNTRY:  US
;      ZIP:  92037
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/795,671
;      FILING DATE:  February 6, 1997
;      CLASSIFICATION:  800
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  HAILE, PH.D., LISA A.
;      REGISTRATION NUMBER:  38,347
;      REFERENCE/DOCKET NUMBER:  07265/106001
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  619/678-5070
;      TELEFAX:  619/678-5099
;  INFORMATION FOR SEQ ID NO:  4:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  126 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
US-08-795-671-4

  Query Match             86.4%;  Score 102;  DB 3;  Length 126;
  Best Local Similarity   81.0%;  Pred. No. 8.5e-09;
  Matches   17;  Conservative    3;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           ::|:|||||||||| |||||||
Db      66 YMFMQKYPHTHLVQQANPRGS 86


RESULT 44
US-09-414-234-2
; Sequence 2, Application US/09414234
; Patent No. 6340668
;   GENERAL INFORMATION:
;        APPLICANT: WOZNEY, John
;                   CELESTE, Anthony J.
;                   THIES, R. Scott
;        TITLE OF INVENTION: BMP-11 COMPOSITIONS
;        NUMBER OF SEQUENCES: 11
;        CORRESPONDENCE ADDRESS:
;             ADDRESSEE: GENETICS INSTITUTE, INC.
;             STREET: 87 CambridgePark Drive
;             CITY: Cambridge
;             STATE: MA
;             COUNTRY: USA
;             ZIP: 02140
;        COMPUTER READABLE FORM:
;             MEDIUM TYPE: Floppy disk
;             COMPUTER: IBM PC compatible
;             OPERATING SYSTEM: PC-DOS/MS-DOS
;             SOFTWARE: PatentIn Release #1.0, Version #1.25
;        CURRENT APPLICATION DATA:
;             APPLICATION NUMBER: US/09/414,234
;             FILING DATE: 07-Oct-1999
;             CLASSIFICATION: <Unknown>
;        ATTORNEY/AGENT INFORMATION:
;             NAME: MEINERT, M.C.
;             REGISTRATION NUMBER: 31,544
;             REFERENCE/DOCKET NUMBER: GI5205-B
;        TELECOMMUNICATION INFORMATION:
;             TELEPHONE: 617 876-1170
;             TELEFAX: 617 876-5851
;   INFORMATION FOR SEQ ID NO: 2:
;        SEQUENCE CHARACTERISTICS:
;             LENGTH: 126 amino acids
;             TYPE: amino acid
;             TOPOLOGY: linear
;        MOLECULE TYPE: protein
;        SEQUENCE DESCRIPTION: SEQ ID NO: 2:
US-09-414-234-2

  Query Match             86.4%;  Score 102;  DB 4;  Length 126;
  Best Local Similarity   81.0%;  Pred. No. 8.5e-09;
  Matches   17;  Conservative    3;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           ::|:|||||||||| |||||||
Db      66 YMFMQKYPHTHLVQQANPRGS 86


RESULT 45
US-08-919-850-2
; Sequence 2, Application US/08919850
; Patent No. 6437111
;  GENERAL INFORMATION:
;    APPLICANT:  WOZNEY, John
;    APPLICANT:  CELESTE, Anthony J.
;    TITLE OF INVENTION:  BMP-11 COMPOSITIONS
;    NUMBER OF SEQUENCES:  12
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  GENETICS INSTITUTE, INC.
;      STREET:  87 CambridgePark Drive
;      CITY:  Cambridge
;      STATE:  MA
;      COUNTRY:  USA
;      ZIP:  02140
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/919,850
;      FILING DATE:  28-AUG-1997
;      CLASSIFICATION:  435
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US 08/247,907
;      FILING DATE:  May 20, 1994
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  LAZAR, Steven R.
;      REGISTRATION NUMBER:  32,618
```

```
;       REFERENCE/DOCKET NUMBER:  GI5205-A
;     TELECOMMUNICATION INFORMATION:
;       TELEPHONE:  617 876-1170
;       TELEFAX:  617 876-5851
;   INFORMATION FOR SEQ ID NO:  2:
;     SEQUENCE CHARACTERISTICS:
;       LENGTH:  126 amino acids
;       TYPE:  amino acid
;       TOPOLOGY:  linear
;     MOLECULE TYPE:  protein
US-08-919-850-2

  Query Match             86.4%;  Score 102;  DB 4;  Length 126;
  Best Local Similarity   81.0%;  Pred. No. 8.5e-09;
  Matches   17;  Conservative    3;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           ::|:||||||||| |||||||
Db      66 YMFMQKYPHTHLVQQANPRGS 86


RESULT 46
PCT-US94-05288-2
; Sequence 2, Application PC/TUS9405288
;  GENERAL INFORMATION:
;     APPLICANT:
;     TITLE OF INVENTION:  BMP-11 COMPOSITIONS
;     NUMBER OF SEQUENCES:  11
;     COMPUTER READABLE FORM:
;       MEDIUM TYPE:  Floppy disk
;       COMPUTER:  IBM PC compatible
;       OPERATING SYSTEM:  PC-DOS/MS-DOS
;       SOFTWARE:  PatentIn Release #1.0, Version #1.25 (EPO)
;     CURRENT APPLICATION DATA:
;       APPLICATION NUMBER:  PCT/US94/05288
;       FILING DATE:
;       CLASSIFICATION:
;   INFORMATION FOR SEQ ID NO:  2:
;     SEQUENCE CHARACTERISTICS:
;       LENGTH:  126 amino acids
;       TYPE:  amino acid
;       TOPOLOGY:  linear
;     MOLECULE TYPE:  protein
PCT-US94-05288-2

  Query Match             86.4%;  Score 102;  DB 5;  Length 126;
  Best Local Similarity   81.0%;  Pred. No. 8.5e-09;
  Matches   17;  Conservative    3;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           ::|:||||||||| |||||||
Db      66 YMFMQKYPHTHLVQQANPRGS 86


RESULT 47
US-08-247-907A-11
; Sequence 11, Application US/08247907A
; Patent No. 5639638
;  GENERAL INFORMATION:
;     APPLICANT:  WOZNEY, John
;     APPLICANT:  CELESTE, Anthony J.
;     TITLE OF INVENTION:  BMP-11 COMPOSITIONS
;     NUMBER OF SEQUENCES:  12
;     CORRESPONDENCE ADDRESS:
;       ADDRESSEE:  GENETICS INSTITUTE, INC.
;       STREET:  87 CambridgePark Drive
;       CITY:  Cambridge
;       STATE:  MA
;       COUNTRY:  USA
;       ZIP:  02140
;     COMPUTER READABLE FORM:
;       MEDIUM TYPE:  Floppy disk
;       COMPUTER:  IBM PC compatible
;       OPERATING SYSTEM:  PC-DOS/MS-DOS
;       SOFTWARE:  PatentIn Release #1.0, Version #1.25
;     CURRENT APPLICATION DATA:
;       APPLICATION NUMBER:  US/08/247,907A
;       FILING DATE:  May 20, 1994
;       CLASSIFICATION:  435
;     ATTORNEY/AGENT INFORMATION:
;       NAME:  LAZAR, Steven R.
;       REGISTRATION NUMBER:  32,618
;       REFERENCE/DOCKET NUMBER:  GI5205-A
;     TELECOMMUNICATION INFORMATION:
;       TELEPHONE:  617 876-1170
;       TELEFAX:  617 876-5851
;   INFORMATION FOR SEQ ID NO:  11:
;     SEQUENCE CHARACTERISTICS:
;       LENGTH:  362 amino acids
;       TYPE:  amino acid
;       TOPOLOGY:  linear
;     MOLECULE TYPE:  protein
US-08-247-907A-11

  Query Match             86.4%;  Score 102;  DB 1;  Length 362;
  Best Local Similarity   81.0%;  Pred. No. 2.6e-08;
  Matches   17;  Conservative    3;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           ::|:||||||||| |||||||
Db     302 YMFMQKYPHTHLVQQANPRGS 322


RESULT 48
US-08-452-772-11
; Sequence 11, Application US/08452772
; Patent No. 5700911
;  GENERAL INFORMATION:
;     APPLICANT:  WOZNEY, John
;     APPLICANT:  CELESTE, Anthony J.
;     TITLE OF INVENTION:  BMP-11 COMPOSITIONS
;     NUMBER OF SEQUENCES:  11
;     CORRESPONDENCE ADDRESS:
;       ADDRESSEE:  GENETICS INSTITUTE, INC.
;       STREET:  87 CambridgePark Drive
;       CITY:  Cambridge
;       STATE:  MA
;       COUNTRY:  USA
;       ZIP:  02140
;     COMPUTER READABLE FORM:
;       MEDIUM TYPE:  Floppy disk
;       COMPUTER:  IBM PC compatible
;       OPERATING SYSTEM:  PC-DOS/MS-DOS
;       SOFTWARE:  PatentIn Release #1.0, Version #1.25
;     CURRENT APPLICATION DATA:
;       APPLICATION NUMBER:  US/08/452,772
;       FILING DATE:  30-MAY-1995
;       CLASSIFICATION:  530
;     PRIOR APPLICATION DATA:
;       APPLICATION NUMBER:  US 08/247,907
;       FILING DATE:  20-MAY-1994
;     ATTORNEY/AGENT INFORMATION:
;       NAME:  LAZAR, Steven R.
;       REGISTRATION NUMBER:  32,618
;       REFERENCE/DOCKET NUMBER:  GI5205-CIP
;     TELECOMMUNICATION INFORMATION:
;       TELEPHONE:  617 876-1170
;       TELEFAX:  617 876-5851
;   INFORMATION FOR SEQ ID NO:  11:
;     SEQUENCE CHARACTERISTICS:
;       LENGTH:  362 amino acids
;       TYPE:  amino acid
;       TOPOLOGY:  linear
;     MOLECULE TYPE:  protein
US-08-452-772-11
```

```
  Query Match             86.4%;  Score 102;  DB 1;  Length 362;
  Best Local Similarity   81.0%;  Pred. No. 2.6e-08;
  Matches   17;  Conservative    3;  Mismatches    1;  Indels    0;  Gaps    0;

Qy      1 FVFLQKYPHTHLVHQANPRGS 21
          ::|:|||||||||| |||||||
Db    302 YMFMQKYPHTHLVQQANPRGS 322


RESULT 49
US-09-414-234-11
; Sequence 11, Application US/09414234
; Patent No. 6340668
;   GENERAL INFORMATION:
;        APPLICANT: WOZNEY, John
;                   CELESTE, Anthony J.
;                   THIES, R. Scott
;        TITLE OF INVENTION: BMP-11 COMPOSITIONS
;        NUMBER OF SEQUENCES: 11
;        CORRESPONDENCE ADDRESS:
;             ADDRESSEE: GENETICS INSTITUTE, INC.
;             STREET: 87 CambridgePark Drive
;             CITY: Cambridge
;             STATE: MA
;             COUNTRY: USA
;             ZIP: 02140
;        COMPUTER READABLE FORM:
;             MEDIUM TYPE: Floppy disk
;             COMPUTER: IBM PC compatible
;             OPERATING SYSTEM: PC-DOS/MS-DOS
;             SOFTWARE: PatentIn Release #1.0, Version #1.25
;        CURRENT APPLICATION DATA:
;             APPLICATION NUMBER: US/09/414,234
;             FILING DATE: 07-Oct-1999
;             CLASSIFICATION: <Unknown>
;        ATTORNEY/AGENT INFORMATION:
;             NAME: MEINERT, M.C.
;             REGISTRATION NUMBER: 31,544
;             REFERENCE/DOCKET NUMBER: GI5205-B
;        TELECOMMUNICATION INFORMATION:
;             TELEPHONE: 617 876-1170
;             TELEFAX: 617 876-5851
;   INFORMATION FOR SEQ ID NO: 11:
;        SEQUENCE CHARACTERISTICS:
;             LENGTH: 362 amino acids
;             TYPE: amino acid
;             TOPOLOGY: linear
;        MOLECULE TYPE: protein
;        SEQUENCE DESCRIPTION: SEQ ID NO: 11:
US-09-414-234-11

  Query Match             86.4%;  Score 102;  DB 4;  Length 362;
  Best Local Similarity   81.0%;  Pred. No. 2.6e-08;
  Matches   17;  Conservative    3;  Mismatches    1;  Indels    0;  Gaps    0;

Qy      1 FVFLQKYPHTHLVHQANPRGS 21
          ::|:|||||||||| |||||||
Db    302 YMFMQKYPHTHLVQQANPRGS 322


RESULT 50
US-08-919-850-11
; Sequence 11, Application US/08919850
; Patent No. 6437111
;  GENERAL INFORMATION:
;    APPLICANT:  WOZNEY, John
;    APPLICANT:  CELESTE, Anthony J.
;    TITLE OF INVENTION:  BMP-11 COMPOSITIONS
;    NUMBER OF SEQUENCES:  12
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  GENETICS INSTITUTE, INC.
;      STREET:  87 CambridgePark Drive
;      CITY:  Cambridge
;      STATE:  MA
;      COUNTRY:  USA
;      ZIP:  02140
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/919,850
;      FILING DATE:  28-AUG-1997
;      CLASSIFICATION:  435
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US 08/247,907
;      FILING DATE:  May 20, 1994
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  LAZAR, Steven R.
;      REGISTRATION NUMBER:  32,618
;      REFERENCE/DOCKET NUMBER:  GI5205-A
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  617 876-1170
;      TELEFAX:  617 876-5851
;  INFORMATION FOR SEQ ID NO:  11:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  362 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
US-08-919-850-11

  Query Match             86.4%;  Score 102;  DB 4;  Length 362;
  Best Local Similarity   81.0%;  Pred. No. 2.6e-08;
  Matches   17;  Conservative    3;  Mismatches    1;  Indels    0;  Gaps    0;

Qy      1 FVFLQKYPHTHLVHQANPRGS 21
          ::|:|||||||||| |||||||
Db    302 YMFMQKYPHTHLVQQANPRGS 322


RESULT 51
PCT-US94-05288-11
; Sequence 11, Application PC/TUS9405288
;  GENERAL INFORMATION:
;    APPLICANT:
;    TITLE OF INVENTION:  BMP-11 COMPOSITIONS
;    NUMBER OF SEQUENCES:  11
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25 (EPO)
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  PCT/US94/05288
;      FILING DATE:
;      CLASSIFICATION:
;  INFORMATION FOR SEQ ID NO:  11:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  362 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
PCT-US94-05288-11

  Query Match             86.4%;  Score 102;  DB 5;  Length 362;
  Best Local Similarity   81.0%;  Pred. No. 2.6e-08;
  Matches   17;  Conservative    3;  Mismatches    1;  Indels    0;  Gaps    0;

Qy      1 FVFLQKYPHTHLVHQANPRGS 21
          ::|:|||||||||| |||||||
Db    302 YMFMQKYPHTHLVQQANPRGS 322


RESULT 52
```

```
US-08-765-875-2
; Sequence 2, Application US/08765875
; Patent No. 5914234
;  GENERAL INFORMATION:
;    APPLICANT:  LEE, SE-JIN
;    APPLICANT:  MCPHERRON, ALEXANDRA C.
;    TITLE OF INVENTION:  GROWTH DIFFERENTIATION FACTOR-11
;    NUMBER OF SEQUENCES:  9
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  SPENSLEY HORN JUBAS & LUBITZ
;      STREET:  1880 CENTURY PARK EAST, FIFTH FLOOR
;      CITY:  LOS ANGELES
;      STATE:  CALIFORNIA
;      COUNTRY:  US
;      ZIP:  90067
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/765,875
;      FILING DATE:
;      CLASSIFICATION:
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/706,958
;      FILING DATE:
;      APPLICATION NUMBER:  US/08/272,763
;      FILING DATE:  08-JUL-1994
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  TUMARKIN PH.D., LISA A.
;      REGISTRATION NUMBER:  P-38,347
;      REFERENCE/DOCKET NUMBER:  PD3641
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  619/455-5100
;      TELEFAX:  619/455-5110
;  INFORMATION FOR SEQ ID NO:  2:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  407 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
US-08-765-875-2

  Query Match             86.4%;  Score 102;  DB 2;  Length 407;
  Best Local Similarity   81.0%;  Pred. No. 3e-08;
  Matches   17;  Conservative    3;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           ::|:||||||||| |||||||
Db     347 YMFMQKYPHTHLVQQANPRGS 367


RESULT 53
US-08-765-875-6
; Sequence 6, Application US/08765875
; Patent No. 5914234
;  GENERAL INFORMATION:
;    APPLICANT:  LEE, SE-JIN
;    APPLICANT:  MCPHERRON, ALEXANDRA C.
;    TITLE OF INVENTION:  GROWTH DIFFERENTIATION FACTOR-11
;    NUMBER OF SEQUENCES:  9
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  SPENSLEY HORN JUBAS & LUBITZ
;      STREET:  1880 CENTURY PARK EAST, FIFTH FLOOR
;      CITY:  LOS ANGELES
;      STATE:  CALIFORNIA
;      COUNTRY:  US
;      ZIP:  90067
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/765,875
;      FILING DATE:
;      CLASSIFICATION:
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/706,958
;      FILING DATE:
;      APPLICATION NUMBER:  US/08/272,763
;      FILING DATE:  08-JUL-1994
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  TUMARKIN PH.D., LISA A.
;      REGISTRATION NUMBER:  P-38,347
;      REFERENCE/DOCKET NUMBER:  PD3641
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  619/455-5100
;      TELEFAX:  619/455-5110
;  INFORMATION FOR SEQ ID NO:  6:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  407 amino acids
;      TYPE:  amino acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
;    IMMEDIATE SOURCE:
;      CLONE:  GDF-11
;    FEATURE:
;      NAME/KEY:  Protein
;      LOCATION:  1..407
US-08-765-875-6

  Query Match             86.4%;  Score 102;  DB 2;  Length 407;
  Best Local Similarity   81.0%;  Pred. No. 3e-08;
  Matches   17;  Conservative    3;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           ::|:||||||||| |||||||
Db     347 YMFMQKYPHTHLVQQANPRGS 367


RESULT 54
US-08-795-671-2
; Sequence 2, Application US/08795671
; Patent No. 6008434
;  GENERAL INFORMATION:
;    APPLICANT:  Se-Jin Lee and Alexandra McPherron
;    TITLE OF INVENTION:  GROWTH DIFFERENTIATION FACTOR-11
;    NUMBER OF SEQUENCES:  9
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Fish & Richardson P.C.
;      STREET:  4225 Executive Square, Suite 1400
;      CITY:  La Jolla
;      STATE:  California
;      COUNTRY:  US
;      ZIP:  92037
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/795,671
;      FILING DATE:  February 6, 1997
;      CLASSIFICATION:  800
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  HAILE, PH.D., LISA A.
;      REGISTRATION NUMBER:  38,347
;      REFERENCE/DOCKET NUMBER:  07265/106001
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  619/678-5070
;      TELEFAX:  619/678-5099
;  INFORMATION FOR SEQ ID NO:  2:
;    SEQUENCE CHARACTERISTICS:
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```
;      LENGTH:  407 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
US-08-795-671-2

  Query Match             86.4%;  Score 102;  DB 3;  Length 407;
  Best Local Similarity   81.0%;  Pred. No. 3e-08;
  Matches   17;  Conservative    3;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           ::|:|||||||||| |||||||
Db     347 YMFMQKYPHTHLVQQANPRGS 367


RESULT 55
US-08-795-671-6
; Sequence 6, Application US/08795671
; Patent No. 6008434
;  GENERAL INFORMATION:
;    APPLICANT:  Se-Jin Lee and Alexandra McPherron
;    TITLE OF INVENTION:  GROWTH DIFFERENTIATION FACTOR-11
;    NUMBER OF SEQUENCES:  9
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Fish & Richardson P.C.
;      STREET:  4225 Executive Square, Suite 1400
;      CITY:  La Jolla
;      STATE:  California
;      COUNTRY:  US
;      ZIP:  92037
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/795,671
;      FILING DATE:  February 6, 1997
;      CLASSIFICATION:  800
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  HAILE, PH.D., LISA A.
;      REGISTRATION NUMBER:  38,347
;      REFERENCE/DOCKET NUMBER:  07265/106001
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  619/678-5070
;      TELEFAX:  619/678-5099
;  INFORMATION FOR SEQ ID NO:  6:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  407 amino acids
;      TYPE:  amino acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
;    IMMEDIATE SOURCE:
;      CLONE:  GDF-11
;    FEATURE:
;      NAME/KEY:  Protein
;      LOCATION:  1..407
US-08-795-671-6

  Query Match             86.4%;  Score 102;  DB 3;  Length 407;
  Best Local Similarity   81.0%;  Pred. No. 3e-08;
  Matches   17;  Conservative    3;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           ::|:|||||||||| |||||||
Db     347 YMFMQKYPHTHLVQQANPRGS 367


RESULT 56
US-08-247-907A-4
; Sequence 4, Application US/08247907A
; Patent No. 5639638
;  GENERAL INFORMATION:
;    APPLICANT:  WOZNEY, John
;    APPLICANT:  CELESTE, Anthony J.
;    TITLE OF INVENTION:  BMP-11 COMPOSITIONS
;    NUMBER OF SEQUENCES:  12
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  GENETICS INSTITUTE, INC.
;      STREET:  87 CambridgePark Drive
;      CITY:  Cambridge
;      STATE:  MA
;      COUNTRY:  USA
;      ZIP:  02140
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/247,907A
;      FILING DATE:  May 20, 1994
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  LAZAR, Steven R.
;      REGISTRATION NUMBER:  32,618
;      REFERENCE/DOCKET NUMBER:  GI5205-A
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  617 876-1170
;      TELEFAX:  617 876-5851
;  INFORMATION FOR SEQ ID NO:  4:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  52 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
US-08-247-907A-4

  Query Match             83.9%;  Score 99;  DB 1;  Length 52;
  Best Local Similarity   85.0%;  Pred. No. 9.7e-09;
  Matches   17;  Conservative    2;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       2 VFLQKYPHTHLVHQANPRGS 21
           :|:|||||||||| |||||||
Db       1 MFMQKYPHTHLVQQANPRGS 20


RESULT 57
US-08-452-772-4
; Sequence 4, Application US/08452772
; Patent No. 5700911
;  GENERAL INFORMATION:
;    APPLICANT:  WOZNEY, John
;    APPLICANT:  CELESTE, Anthony J.
;    TITLE OF INVENTION:  BMP-11 COMPOSITIONS
;    NUMBER OF SEQUENCES:  11
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  GENETICS INSTITUTE, INC.
;      STREET:  87 CambridgePark Drive
;      CITY:  Cambridge
;      STATE:  MA
;      COUNTRY:  USA
;      ZIP:  02140
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/452,772
;      FILING DATE:  30-MAY-1995
;      CLASSIFICATION:  530
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US 08/247,907
;      FILING DATE:  20-MAY-1994
```

```
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  LAZAR, Steven R.
;      REGISTRATION NUMBER:  32,618
;      REFERENCE/DOCKET NUMBER:  GI5205-CIP
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  617 876-1170
;      TELEFAX:  617 876-5851
;  INFORMATION FOR SEQ ID NO:  4:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  52 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
US-08-452-772-4

  Query Match             83.9%;  Score 99;  DB 1;  Length 52;
  Best Local Similarity   85.0%;  Pred. No. 9.7e-09;
  Matches   17;  Conservative    2;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       2 VFLQKYPHTHLVHQANPRGS 21
           :|:|||||||||| |||||||
Db       1 MFMQKYPHTHLVQQANPRGS 20


RESULT 58
US-09-414-234-4
; Sequence 4, Application US/09414234
; Patent No. 6340668
;  GENERAL INFORMATION:
;       APPLICANT: WOZNEY, John
;                  CELESTE, Anthony J.
;                  THIES, R. Scott
;       TITLE OF INVENTION: BMP-11 COMPOSITIONS
;       NUMBER OF SEQUENCES: 11
;       CORRESPONDENCE ADDRESS:
;            ADDRESSEE: GENETICS INSTITUTE, INC.
;            STREET: 87 CambridgePark Drive
;            CITY: Cambridge
;            STATE: MA
;            COUNTRY: USA
;            ZIP: 02140
;       COMPUTER READABLE FORM:
;            MEDIUM TYPE: Floppy disk
;            COMPUTER: IBM PC compatible
;            OPERATING SYSTEM: PC-DOS/MS-DOS
;            SOFTWARE: PatentIn Release #1.0, Version #1.25
;       CURRENT APPLICATION DATA:
;            APPLICATION NUMBER: US/09/414,234
;            FILING DATE: 07-Oct-1999
;            CLASSIFICATION: <Unknown>
;       ATTORNEY/AGENT INFORMATION:
;            NAME: MEINERT, M.C.
;            REGISTRATION NUMBER: 31,544
;            REFERENCE/DOCKET NUMBER: GI5205-B
;       TELECOMMUNICATION INFORMATION:
;            TELEPHONE: 617 876-1170
;            TELEFAX: 617 876-5851
;  INFORMATION FOR SEQ ID NO: 4:
;       SEQUENCE CHARACTERISTICS:
;            LENGTH: 52 amino acids
;            TYPE: amino acid
;            TOPOLOGY: linear
;       MOLECULE TYPE: protein
;       SEQUENCE DESCRIPTION: SEQ ID NO: 4:
US-09-414-234-4

  Query Match             83.9%;  Score 99;  DB 4;  Length 52;
  Best Local Similarity   85.0%;  Pred. No. 9.7e-09;
  Matches   17;  Conservative    2;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       2 VFLQKYPHTHLVHQANPRGS 21
           :|:|||||||||| |||||||
Db       1 MFMQKYPHTHLVQQANPRGS 20


RESULT 59
US-08-919-850-4
; Sequence 4, Application US/08919850
; Patent No. 6437111
;  GENERAL INFORMATION:
;    APPLICANT:  WOZNEY, John
;    APPLICANT:  CELESTE, Anthony J.
;    TITLE OF INVENTION:  BMP-11 COMPOSITIONS
;    NUMBER OF SEQUENCES:  12
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  GENETICS INSTITUTE, INC.
;      STREET:  87 CambridgePark Drive
;      CITY:  Cambridge
;      STATE:  MA
;      COUNTRY:  USA
;      ZIP:  02140
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/919,850
;      FILING DATE:  28-AUG-1997
;      CLASSIFICATION:  435
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US 08/247,907
;      FILING DATE:  May 20, 1994
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  LAZAR, Steven R.
;      REGISTRATION NUMBER:  32,618
;      REFERENCE/DOCKET NUMBER:  GI5205-A
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  617 876-1170
;      TELEFAX:  617 876-5851
;  INFORMATION FOR SEQ ID NO:  4:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  52 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
US-08-919-850-4

  Query Match             83.9%;  Score 99;  DB 4;  Length 52;
  Best Local Similarity   85.0%;  Pred. No. 9.7e-09;
  Matches   17;  Conservative    2;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       2 VFLQKYPHTHLVHQANPRGS 21
           :|:|||||||||| |||||||
Db       1 MFMQKYPHTHLVQQANPRGS 20


RESULT 60
PCT-US94-05288-4
; Sequence 4, Application PC/TUS9405288
;  GENERAL INFORMATION:
;    APPLICANT:
;    TITLE OF INVENTION:  BMP-11 COMPOSITIONS
;    NUMBER OF SEQUENCES:  11
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25 (EPO)
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  PCT/US94/05288
;      FILING DATE:
;      CLASSIFICATION:
;  INFORMATION FOR SEQ ID NO:  4:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  52 amino acids
```

```
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
PCT-US94-05288-4

  Query Match             83.9%;  Score 99;  DB 5;  Length 52;
  Best Local Similarity   85.0%;  Pred. No. 9.7e-09;
  Matches   17;  Conservative    2;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       2 VFLQKYPHTHLVHQANPRGS 21
           :|:|||||||||| |||||||
Db       1 MFMQKYPHTHLVQQANPRGS 20


RESULT 61
US-09-378-238-33
; Sequence 33, Application US/09378238
; Patent No. 6465239
; GENERAL INFORMATION:
;  APPLICANT: Lee, Se-Jin
;  APPLICANT: McPherron, Alexandra C.
;  TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR-8 NUCLEIC
;  TITLE OF INVENTION: ACID AND POLYPEPTIDES FROM AQUATIC SPECIES AND NON-HUMAN
;  TITLE OF INVENTION: TRANSGENIC AQUATIC SPECIES
;  FILE REFERENCE: JHU1120-9
;  CURRENT APPLICATION NUMBER: US/09/378,238
;  CURRENT FILING DATE: 1999-08-19
;  EARLIER APPLICATION NUMBER: 08/795,071
;  EARLIER FILING DATE: 1997-02-05
;  EARLIER APPLICATION NUMBER: 08/525,596
;  EARLIER FILING DATE: 1995-10-25
;  EARLIER APPLICATION NUMBER: PCT/US94/03019
;  EARLIER FILING DATE: 1994-03-18
;  EARLIER APPLICATION NUMBER: 08/033,923
;  EARLIER FILING DATE: 1993-03-19
;  NUMBER OF SEQ ID NOS: 41
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 33
;   LENGTH: 136
;   TYPE: PRT
;   ORGANISM: Piscine
US-09-378-238-33

  Query Match             77.1%;  Score 91;  DB 4;  Length 136;
  Best Local Similarity   71.4%;  Pred. No. 4.8e-07;
  Matches   15;  Conservative    5;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           :: |||||||||||::|||||:
Db      76 YMHLQKYPHTHLVNKANPRGT 96


RESULT 62
US-09-378-238-31
; Sequence 31, Application US/09378238
; Patent No. 6465239
; GENERAL INFORMATION:
;  APPLICANT: Lee, Se-Jin
;  APPLICANT: McPherron, Alexandra C.
;  TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR-8 NUCLEIC
;  TITLE OF INVENTION: ACID AND POLYPEPTIDES FROM AQUATIC SPECIES AND NON-HUMAN
;  TITLE OF INVENTION: TRANSGENIC AQUATIC SPECIES
;  FILE REFERENCE: JHU1120-9
;  CURRENT APPLICATION NUMBER: US/09/378,238
;  CURRENT FILING DATE: 1999-08-19
;  EARLIER APPLICATION NUMBER: 08/795,071
;  EARLIER FILING DATE: 1997-02-05
;  EARLIER APPLICATION NUMBER: 08/525,596
;  EARLIER FILING DATE: 1995-10-25
;  EARLIER APPLICATION NUMBER: PCT/US94/03019
;  EARLIER FILING DATE: 1994-03-18
;  EARLIER APPLICATION NUMBER: 08/033,923
;  EARLIER FILING DATE: 1993-03-19
;  NUMBER OF SEQ ID NOS: 41
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 31
;   LENGTH: 157
;   TYPE: PRT
;   ORGANISM: Piscine
US-09-378-238-31

  Query Match             77.1%;  Score 91;  DB 4;  Length 157;
  Best Local Similarity   71.4%;  Pred. No. 5.5e-07;
  Matches   15;  Conservative    5;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           :: |||||||||||::|||||:
Db      97 YMHLQKYPHTHLVNKANPRGT 117


RESULT 63
US-09-252-149B-36
; Sequence 36, Application US/09252149B
; Patent No. 6369201
; GENERAL INFORMATION:
;  APPLICANT: Barker, Christopher A.
;  APPLICANT:  Morsey, Mohamad
;  TITLE OF INVENTION: IMMUNOLOGICAL METHODS TO MODULAR MYOSTATIN IN
;  TITLE OF INVENTION:  VERTEBRATE SUBJECTS
;  FILE REFERENCE: 9001-0042
;  CURRENT APPLICATION NUMBER: US/09/252,149B
;  CURRENT FILING DATE:  1999-02-18
;  PRIOR APPLICATION NUMBER: 60/075,213
;  PRIOR FILING DATE: 1998-02-19
;  NUMBER OF SEQ ID NOS: 39
;  SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 36
;   LENGTH: 374
;   TYPE: PRT
;   ORGANISM: Danio rerio
US-09-252-149B-36

  Query Match             76.3%;  Score 90;  DB 4;  Length 374;
  Best Local Similarity   66.7%;  Pred. No. 2e-06;
  Matches   14;  Conservative    7;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           :::|||||||||||::|:|||:
Db     314 YMYLQKYPHTHLVNKASPRGT 334


RESULT 64
US-09-378-238-29
; Sequence 29, Application US/09378238
; Patent No. 6465239
; GENERAL INFORMATION:
;  APPLICANT: Lee, Se-Jin
;  APPLICANT: McPherron, Alexandra C.
;  TITLE OF INVENTION: GROWTH DIFFERENTIATION FACTOR-8 NUCLEIC
;  TITLE OF INVENTION: ACID AND POLYPEPTIDES FROM AQUATIC SPECIES AND NON-HUMAN
;  TITLE OF INVENTION: TRANSGENIC AQUATIC SPECIES
;  FILE REFERENCE: JHU1120-9
;  CURRENT APPLICATION NUMBER: US/09/378,238
;  CURRENT FILING DATE: 1999-08-19
;  EARLIER APPLICATION NUMBER: 08/795,071
;  EARLIER FILING DATE: 1997-02-05
;  EARLIER APPLICATION NUMBER: 08/525,596
;  EARLIER FILING DATE: 1995-10-25
;  EARLIER APPLICATION NUMBER: PCT/US94/03019
;  EARLIER FILING DATE: 1994-03-18
;  EARLIER APPLICATION NUMBER: 08/033,923
;  EARLIER FILING DATE: 1993-03-19
;  NUMBER OF SEQ ID NOS: 41
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 29
;   LENGTH: 374
```

```
;   TYPE: PRT
;   ORGANISM: Danio rerio
US-09-378-238-29

  Query Match             76.3%;  Score 90;  DB 4;  Length 374;
  Best Local Similarity   66.7%;  Pred. No. 2e-06;
  Matches   14;  Conservative    7;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FVFLQKYPHTHLVHQANPRGS 21
           :::|||||||||||:|:|||:
Db     314 YMYLQKYPHTHLVNKASPRGT 334


RESULT 65
US-09-134-001C-5633
; Sequence 5633, Application US/09134001C
; Patent No. 6380370
; GENERAL INFORMATION:
;  APPLICANT: Lynn Doucette-Stamm et al
;  TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO STAPHYLOCOCCUS
;  TITLE OF INVENTION:  EPIDERMIDIS FOR DIAGNOSTICS AND THERAPEUTICS
;  FILE REFERENCE: GTC-007
;  CURRENT APPLICATION NUMBER: US/09/134,001C
;  CURRENT FILING DATE:  1998-08-13
;  PRIOR APPLICATION NUMBER: US 60/064,964
;  PRIOR FILING DATE: 1997-11-08
;  PRIOR APPLICATION NUMBER: US 60/055,779
;  PRIOR FILING DATE: 1997-08-14
;  NUMBER OF SEQ ID NOS: 5674
; SEQ ID NO 5633
;   LENGTH: 358
;   TYPE: PRT
;   ORGANISM: Staphylococcus epidermidis
US-09-134-001C-5633

  Query Match             41.5%;  Score 49;  DB 4;  Length 358;
  Best Local Similarity   53.8%;  Pred. No. 4.6;
  Matches    7;  Conservative    4;  Mismatches    2;  Indels    0;  Gaps    0;

Qy       5 QKYPHTHLVHQAN 17
           ||:||  ::||:|
Db      55 QKHPHIKVIHQSN 67


RESULT 66
US-08-158-682A-2
; Sequence 2, Application US/08158682A
; Patent No. 5434058
;  GENERAL INFORMATION:
;    APPLICANT:  Davidson, Nicholas O.
;    TITLE OF INVENTION:  Apolipoprotein B RNA Editing Protein:
;    TITLE OF INVENTION:  Composition and Method
;    NUMBER OF SEQUENCES:  18
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  ARNOLD, WHITE & DURKEE
;      STREET:  321 No. 5434058th Clark Street, Suite 800
;      CITY:  Chicago
;      STATE:  Illinois
;      COUNTRY:  USA
;      ZIP:  60610
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/158,682A
;      FILING DATE:
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Coolley, Ronald B.
;      REGISTRATION NUMBER:  27,187
;      REFERENCE/DOCKET NUMBER:  ARCD:085
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (312) 744-0090
;      TELEFAX:  (312) 245-4961
;  INFORMATION FOR SEQ ID NO:  2:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  229 amino acids
;      TYPE:  amino acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  peptide
US-08-158-682A-2

  Query Match             41.1%;  Score 48.5;  DB 1;  Length 229;
  Best Local Similarity   41.7%;  Pred. No. 3.4;
  Matches   10;  Conservative    2;  Mismatches    5;  Indels    7;  Gaps    1;

Qy       3 FLQKYPH-------THLVHQANPR 19
           || :|||         | | |:||
Db     103 FLSRYPHVTLFIYIARLYHHADPR 126


RESULT 67
US-08-015-203-2
; Sequence 2, Application US/08015203
; Patent No. 5550034
;  GENERAL INFORMATION:
;    APPLICANT:  Teng, BaBie
;    APPLICANT:  Davidson, Nicholas O.
;    APPLICANT:  Burant, Charles F.
;    TITLE OF INVENTION:  Apolipoprotein B RNA Editing Protein:
;    TITLE OF INVENTION:  Composition and Method
;    NUMBER OF SEQUENCES:  2
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  ARNOLD, WHITE & DURKEE
;      STREET:  321 No. 5550034th Clark Street, Suite 800
;      CITY:  Chicago
;      STATE:  Illinois
;      COUNTRY:  USA
;      ZIP:  60610
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/015,203
;      FILING DATE:  19930209
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Coolley, Ronald B.
;      REGISTRATION NUMBER:  27,187
;      REFERENCE/DOCKET NUMBER:  ARCD:069
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (312) 744-0090
;      TELEFAX:  (312) 245-4961
;  INFORMATION FOR SEQ ID NO:  2:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  229 amino acids
;      TYPE:  amino acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  peptide
US-08-015-203-2

  Query Match             41.1%;  Score 48.5;  DB 1;  Length 229;
  Best Local Similarity   41.7%;  Pred. No. 3.4;
  Matches   10;  Conservative    2;  Mismatches    5;  Indels    7;  Gaps    1;

Qy       3 FLQKYPH-------THLVHQANPR 19
           || :|||         | | |:||
Db     103 FLSRYPHVTLFIYIARLYHHADPR 126
```

```
RESULT 68
US-08-687-895-5
; Sequence 5, Application US/08687895
; Patent No. 5747319
;  GENERAL INFORMATION:
;    APPLICANT:  Au-Young, Janice
;    APPLICANT:  Hawkins, Phillip R.
;    APPLICANT:  Hillman, Jennifer L.
;    TITLE OF INVENTION:  A NOVEL HUMAN MRNA EDITING ENZYME
;    NUMBER OF SEQUENCES:  5
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Incyte Pharmaceuticals, Inc.
;      STREET:  3174 Porter Drive
;      CITY:  Palo Alto
;      STATE:  CA
;      COUNTRY:  U.S.
;      ZIP:  94304
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Diskette
;      COMPUTER:  IBM Compatible
;      OPERATING SYSTEM:  DOS
;      SOFTWARE:  FastSEQ Version 1.5
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/687,895
;      FILING DATE:  Filed Herewith
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Billings, Lucy J.
;      REGISTRATION NUMBER:  36,749
;      REFERENCE/DOCKET NUMBER:  PF-0109 US
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  415-855-0555
;      TELEFAX:  415-845-4166
;  INFORMATION FOR SEQ ID NO:  5:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  229 amino acids
;      TYPE:  amino acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  peptide
;    IMMEDIATE SOURCE:
;      LIBRARY:  GenBank
;      CLONE:  585813
US-08-687-895-5

  Query Match             41.1%;  Score 48.5;  DB 1;  Length 229;
  Best Local Similarity   41.7%;  Pred. No. 3.4;
  Matches   10;  Conservative    2;  Mismatches    5;  Indels    7;  Gaps    1;

Qy       3 FLQKYPH-------THLVHQANPR 19
           || :|||         | | |:||
Db     103 FLSRYPHVTLFIYIARLYHHADPR 126


RESULT 69
US-08-816-241-5
; Sequence 5, Application US/08816241
; Patent No. 5804185
;  GENERAL INFORMATION:
;    APPLICANT:  Bandman, Olga
;    APPLICANT:  Goli, Surya K.
;    TITLE OF INVENTION:  NOVEL RNA EDITING ENZYME
;    NUMBER OF SEQUENCES:  5
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Incyte Pharmaceuticals, Inc.
;      STREET:  3174 Porter Drive
;      CITY:  Palo Alto
;      STATE:  CA
;      COUNTRY:  USA
;      ZIP:  94304
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Diskette
;      COMPUTER:  IBM Compatible
;      OPERATING SYSTEM:  DOS
;      SOFTWARE:  FastSEQ for Windows Version 2.0
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/816,241
;      FILING DATE:  Filed Herewith
;      CLASSIFICATION:  435
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:
;      FILING DATE:
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Billings, Lucy J.
;      REGISTRATION NUMBER:  36,749
;      REFERENCE/DOCKET NUMBER:  PF-0239 US
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  415-855-0555
;      TELEFAX:  415-845-4166
;  INFORMATION FOR SEQ ID NO:  5:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  229 amino acids
;      TYPE:  amino acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    IMMEDIATE SOURCE:
;      LIBRARY:  GenBank
;      CLONE:  585813
US-08-816-241-5

  Query Match             41.1%;  Score 48.5;  DB 1;  Length 229;
  Best Local Similarity   41.7%;  Pred. No. 3.4;
  Matches   10;  Conservative    2;  Mismatches    5;  Indels    7;  Gaps    1;

Qy       3 FLQKYPH-------THLVHQANPR 19
           || :|||         | | |:||
Db     103 FLSRYPHVTLFIYIARLYHHADPR 126


RESULT 70
US-09-040-482-5
; Sequence 5, Application US/09040482
; Patent No. 5916556
;  GENERAL INFORMATION:
;    APPLICANT:  Au-Young, Janice
;    APPLICANT:  Hawkins, Phillip R.
;    APPLICANT:  Hillman, Jennifer L.
;    TITLE OF INVENTION:  A NOVEL HUMAN MRNA EDITING ENZYME
;    NUMBER OF SEQUENCES:  5
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Incyte Pharmaceuticals, Inc.
;      STREET:  3174 Porter Drive
;      CITY:  Palo Alto
;      STATE:  CA
;      COUNTRY:  U.S.
;      ZIP:  94304
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Diskette
;      COMPUTER:  IBM Compatible
;      OPERATING SYSTEM:  DOS
;      SOFTWARE:  FastSEQ Version 1.5
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/09/040,482
;      FILING DATE:
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  08/687,895
;      FILING DATE:
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Billings, Lucy J.
;      REGISTRATION NUMBER:  36,749
;      REFERENCE/DOCKET NUMBER:  PF-0109 US
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  415-855-0555
;      TELEFAX:  415-845-4166
;  INFORMATION FOR SEQ ID NO:  5:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  229 amino acids
```

```
;      TYPE:  amino acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  peptide
;    IMMEDIATE SOURCE:
;      LIBRARY:  GenBank
;      CLONE:  585813
US-09-040-482-5

  Query Match             41.1%;  Score 48.5;  DB 2;  Length 229;
  Best Local Similarity   41.7%;  Pred. No. 3.4;
  Matches   10;  Conservative    2;  Mismatches    5;  Indels    7;  Gaps    1;

Qy       3 FLQKYPH-------THLVHQANPR 19
           || :|||         | | |:||
Db     103 FLSRYPHVTLFIYIARLYHHADPR 126


RESULT 71
US-09-128-395-5
; Sequence 5, Application US/09128395
; Patent No. 6087108
;  GENERAL INFORMATION:
;    APPLICANT:  Bandman, Olga
;    APPLICANT:  Goli, Surya K.
;    TITLE OF INVENTION:  NOVEL RNA EDITING ENZYME
;    NUMBER OF SEQUENCES:  5
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Incyte Pharmaceuticals, Inc.
;      STREET:  3174 Porter Drive
;      CITY:  Palo Alto
;      STATE:  CA
;      COUNTRY:  USA
;      ZIP:  94304
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Diskette
;      COMPUTER:  IBM Compatible
;      OPERATING SYSTEM:  DOS
;      SOFTWARE:  FastSEQ for Windows Version 2.0
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/09/128,395
;      FILING DATE:
;      CLASSIFICATION:
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  08/816,241
;      FILING DATE:
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Billings, Lucy J.
;      REGISTRATION NUMBER:  36,749
;      REFERENCE/DOCKET NUMBER:  PF-0239 US
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  415-855-0555
;      TELEFAX:  415-845-4166
;  INFORMATION FOR SEQ ID NO:  5:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  229 amino acids
;      TYPE:  amino acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    IMMEDIATE SOURCE:
;      LIBRARY:  GenBank
;      CLONE:  585813
US-09-128-395-5

  Query Match             41.1%;  Score 48.5;  DB 3;  Length 229;
  Best Local Similarity   41.7%;  Pred. No. 3.4;
  Matches   10;  Conservative    2;  Mismatches    5;  Indels    7;  Gaps    1;

Qy       3 FLQKYPH-------THLVHQANPR 19
           || :|||         | | |:||
Db     103 FLSRYPHVTLFIYIARLYHHADPR 126


RESULT 72
US-09-199-637A-273
; Sequence 273, Application US/09199637A
; Patent No. 6355411
; GENERAL INFORMATION:
;  APPLICANT:  Ausubel, Frederick
;  APPLICANT:  Goodman, Howard M.
;  APPLICANT:  Rahme, Laurence G.
;  APPLICANT:  Mahajan-Miklos, Shalina
;  APPLICANT:  Tan, Man-Wah
;  APPLICANT:  Cao, Hui
;  APPLICANT:  Drenkard, Eliana
;  APPLICANT:  Tsongalis, John
;  TITLE OF INVENTION:  VIRULENCE-ASSOCIATED NUCLEIC ACID
;  TITLE OF INVENTION:  SEQUENCES AND USES THEREOF
;  FILE REFERENCE:  00786/361002
;  CURRENT APPLICATION NUMBER: US/09/199,637A
;  CURRENT FILING DATE:  1998-11-25
;  PRIOR APPLICATION NUMBER:  60/066,517
;  PRIOR FILING DATE:  1997-11-25
;  NUMBER OF SEQ ID NOS:  437
;  SOFTWARE:  FastSEQ for Windows Version 4.0
; SEQ ID NO 273
;   LENGTH: 989
;   TYPE: PRT
;   ORGANISM: Pseudomonas aeruginosa
US-09-199-637A-273

  Query Match             39.0%;  Score 46;  DB 4;  Length 989;
  Best Local Similarity   47.4%;  Pred. No. 40;
  Matches    9;  Conservative    3;  Mismatches    7;  Indels    0;  Gaps    0;

Qy       2 VFLQKYPHTHLVHQANPRG 20
           ||| :: | ||:  |  ||
Db     639 VFLARFVHQHLLEAALQRG 657


RESULT 73
US-08-484-905-79
; Sequence 79, Application US/08484905
; Patent No. 5976551
;  GENERAL INFORMATION:
;    APPLICANT:  Mottez, Estelle
;    APPLICANT:  Abastado, Jean-Pierre
;    APPLICANT:  Kourilsky, Philippe
;    TITLE OF INVENTION:  An Altered Major Histocompatibility
;    TITLE OF INVENTION:  Complex(MHC) Determinant and Methods for Using the
;    TITLE OF INVENTION:  Determinant
;    NUMBER OF SEQUENCES:  127
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Finnegan, Henderson, Farabow, Garrett &
;      ADDRESSEE:  Dunner
;      STREET:  1300 I Street, N.W., Suite 700
;      CITY:  Washington
;      STATE:  D.C.
;      ZIP:  20005-3315
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy Disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS-/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/484,905
;      FILING DATE:  07-JUNE-1995
;      CLASSIFICATION:  530
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US 07/801,818
;      FILING DATE:  05-DEC-1991
;      CLASSIFICATION:  530
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US 07/792,473
;      FILING DATE:  15-NOV-1991
;      CLASSIFICATION:  530
```

```
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Potter, Jane E. R.
;      REGISTRATION NUMBER:  33,332
;      REFERENCE/DOCKET NUMBER:  03495.0106-03000
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  202-408-4000
;      TELEFAX:  202-408-4400
;  INFORMATION FOR SEQ ID NO:  79:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  289 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  peptide
US-08-484-905-79

  Query Match             38.1%;  Score 45;  DB 2;  Length 289;
  Best Local Similarity   53.8%;  Pred. No. 15;
  Matches    7;  Conservative    1;  Mismatches    5;  Indels    0;  Gaps    0;

Qy       8 PHTHLVHQANPRG 20
           | ||: | | | |
Db     185 PKTHVTHHARPEG 197


RESULT 74
US-08-481-985B-79
; Sequence 79, Application US/08481985B
; Patent No. 6011146
;  GENERAL INFORMATION:
;    APPLICANT:  Mottez, Estelle
;    APPLICANT:  Abastado, Jean-Pierre
;    APPLICANT:  Kourilsky, Phillipe
;    TITLE OF INVENTION:  Altered Major Histocompatibility Complex
;    TITLE OF INVENTION:
;    NUMBER OF SEQUENCES:  148
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Finnegan, Henderson, Farabow, Garrett &
;      ADDRESSEE:  Dunner
;      STREET:  1300 I Street, N.W., Suite 700
;      CITY:  Washington
;      STATE:  D.C.
;      ZIP:  20005-3315
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/481,985B
;      FILING DATE:  07-JUN-1995
;      CLASSIFICATION:  435
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US 07/801,818
;      FILING DATE:  05-DEC-1991
;      CLASSIFICATION:  435
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US 07/792,473
;      FILING DATE:  15-NOV-1991
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Meyers, Kenneth J.
;      REGISTRATION NUMBER:  25,146
;      REFERENCE/DOCKET NUMBER:  03495.0106-04000
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  202-408-4000
;      TELEFAX:  202-408-4400
;  INFORMATION FOR SEQ ID NO:  79:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  289 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  peptide
US-08-481-985B-79

  Query Match             38.1%;  Score 45;  DB 3;  Length 289;
  Best Local Similarity   53.8%;  Pred. No. 15;
  Matches    7;  Conservative    1;  Mismatches    5;  Indels    0;  Gaps    0;

Qy       8 PHTHLVHQANPRG 20
           | ||: | | | |
Db     185 PKTHVTHHARPEG 197


RESULT 75
US-08-370-476-79
; Sequence 79, Application US/08370476
; Patent No. 6153408
;  GENERAL INFORMATION:
;    APPLICANT:  Mottez, Estelle
;    APPLICANT:  Abastado, Jean-Pierre
;    APPLICANT:  Kourilsky, Phillipe
;    APPLICANT:  Lone, Yu-Chun
;    APPLICANT:  Ojcius, David
;    APPLICANT:  Casrouge, Armanda
;    TITLE OF INVENTION:  Altered Major Histocompatibility Complex
;    TITLE OF INVENTION:
;    NUMBER OF SEQUENCES:  127
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Finnegan, Henderson, Farabow, Garrett &
;      ADDRESSEE:  Dunner
;      STREET:  1300 I Street, N.W., Suite 700
;      CITY:  Washington
;      STATE:  D.C.
;      ZIP:  20005-3315
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/370,476
;      FILING DATE:
;      CLASSIFICATION:  435
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US 08/117,575
;      FILING DATE:  07-SEP-1993
;      APPLICATION NUMBER:  US 08/072,787
;      FILING DATE:  06-JUN-1993
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US 07/801,818
;      FILING DATE:  05-DEC-1991
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US 07/792,473
;      FILING DATE:  15-NOV-1991
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Meyers, Kenneth J.
;      REGISTRATION NUMBER:  25,146
;      REFERENCE/DOCKET NUMBER:  05243.0001-01000
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  202-408-4000
;      TELEFAX:  202-408-4400
;  INFORMATION FOR SEQ ID NO:  79:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  289 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  peptide
US-08-370-476-79

  Query Match             38.1%;  Score 45;  DB 4;  Length 289;
  Best Local Similarity   53.8%;  Pred. No. 15;
  Matches    7;  Conservative    1;  Mismatches    5;  Indels    0;  Gaps    0;

Qy       8 PHTHLVHQANPRG 20
           | ||: | | | |
Db     185 PKTHVTHHARPEG 197
```

Search completed: March 24, 2003, 17:46:51
Job time : 16 secs

Access DB# 89723 + 89725

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Belyavskyi Examiner # : 79284 Date: 3/24/03
Art Unit: 1644 Phone Number 308-4232 Serial Number: 09/620586
Mail Box and Bldg/Room Location: 9D09 9E12 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

****

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: __________

Inventors (please provide full names): __________

Earliest Priority Filing Date: __________

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